

DEPARTMENT OF THE ARMY
Wilmington District, Corps of Engineers
Post Office Box 1890
Wilmington, North Carolina 28402-1890
(<http://www.saw.usace.army.mil/wetlands/regtour.htm>)

Action ID No. 200301310

December 19, 2003

PUBLIC NOTICE

The County of Harnett, c/o Mr. Rodney Tart, PO Box 1119, Lillington, NC 27546, has applied for a Department of the Army (DA) permit TO TEMPORARILY IMPACT SECTION 404 WETLANDS AND STREAM CHANNELS AND TO AUTHORIZE THE DISCHARGE OF FILL MATERIAL INTO JURISDICTIONAL STREAMS FOR THE PURPOSE OF CONSTRUCTING GRAVITY SEWER OUTFALL LINES AND FORECMAINS, ABOVE AND BELOW HEADWATERS, IN WETLANDS, UNNAMED TRIBUTARIES, NEILLS CREEK, KENNETH CREEK, AND THE CAPE FEAR RIVER FROM THE TOWN OF FUQUAY-VARINA, WAKE COUNTY, TO THE TOWN OF LILLINGTON, HARNETT COUNTY, NORTH CAROLINA. TEMPORARY IMPACTS CONSIST OF 2.57 ACRES OF RIPARIAN WETLAND AND 3899 LINEAR FEET OF STREAM CHANNELS. PERMANENT IMPACTS ARE COMPRISED OF THE DISCHARGE OF FILL MATERIAL INTO 84 LINEAR FEET OF STREAM CHANNELS AND THE CONVERSION OF 0.745 ACRES OF FORESTED WETLAND TO HERBACEOUS WETLANDS.

The following description of the work is taken from data provided by the applicant and from observations made during a site visit by a representative of the Corps of Engineers. The project site is a 40 to 60 foot wide construction corridor that extends approximately 15 miles from Fuquay-Varina's Wastewater Treatment Plant approximately 15 miles south to Lillington's Wastewater Treatment Plant. Proposed impacts to jurisdictional streams and wetlands are associated with the construction of sewer lines which entails 62 wetland crossings, 80 stream crossings, and one crossing of the Cape Fear River. Plans submitted with the application show that each crossing would be performed by the open cut and backfill method using track excavators. The applicant has proposed to utilize a Port-a-Dam system for Cape Fear River crossing. The proposed project includes a 12-foot wide, mowed maintenance corridor that would result in 84 linear feet of permanent stream channel impact. In addition, the routine of mowing this corridor would alter 0.745 acres of wetland vegetation community from forest to herbaceous. The purpose of the work is to construct a regional wastewater collection system for portions of Wake and Harnett Counties. The current use of the project area is predominantly undeveloped riparian forest with some timber harvesting, agricultural and residential activities. The Plans showing the work are included with this public notice.

The application for a DA permit also includes a mitigation proposal. The applicant proposes to make payment to the North Carolina Wetlands Restoration Program at a 2:1 ratio for 84 linear feet of stream impact and 0.745 acres of wetland impact.

This proposal shall be reviewed for the applicability of other actions by North Carolina agencies such as:

- a. The issuance of a Water Quality Certification under Section 401 of the Clean Water Act by the North Carolina Division of Water Quality (NCDWQ).
- b. The issuance of a permit to dredge and/or fill under North Carolina General Statute 113-229 by the North Carolina Division of Coastal Management (NCDCM).
- c. The issuance of a permit under the North Carolina Coastal Area Management Act (CAMA) by the North Carolina Division of Coastal Management (NCDCM) or their delegates.
- d. The issuance of an easement to fill or otherwise occupy State-owned submerged land under North Carolina General Statute 143-341(4), 146-6, 146-11, and 146-12 by the North Carolina Department of Administration (NCDA) and the North Carolina Council of State.
- e. The approval of an Erosion and Sedimentation Control Plan by the Land Quality Section, North Carolina Division of Land Resources (NCDLR), pursuant to the State Sedimentation Pollution Control Act of 1973 (NC G.S. 113 A-50-66).

The requested Department of the Army (DA) permit will be denied if any required State or local authorization and/or certification are denied. No DA permit will be issued until a State coordinated viewpoint is received and reviewed by this agency. Recipients of this notice are encouraged to furnish comments on factors of concern represented by the above agencies directly to the respective agency, with a copy furnished to the Corps of Engineers.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The District Engineer's initial determination is that the proposed project would not adversely impact EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

This application is being considered pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). Any person may request, in writing within the comment period specified in the notice, that a public hearing be held to consider this application. Requests for public hearing shall state, with particularity, the reasons for holding a public hearing.

The District Engineer has consulted the latest published version of the National Register of Historic Places for the presence or absence of registered properties, or properties listed as being eligible for inclusion therein, and this site is not registered property or property listed as being eligible for inclusion in the Register. However, information submitted by the applicant included draft results from an Archaeological Survey (August 2003) conducted by the applicant's consultant, that identified seven new archaeological sites and one isolated find within the project area.

The District Engineer, based on available information, has determined that the proposed activity may result in adverse impacts to species, or their critical habitat, designated as endangered or threatened pursuant to the Endangered Species Act of 1973. This includes the federally endangered Cape Fear Shiner (*Notropis Mekistocholas*).

The decision, whether to issue a permit, will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts that the proposed activity may have on the public interest requires a careful weighing of all those factors that become relevant in each particular case. The benefits that may be expected to accrue from the proposal must be balanced against its foreseeable detriments. The decision whether to authorize a proposal, and if so the conditions under which it will be allowed to occur, are therefore decided by the outcome of the general balancing process. That decision should reflect the national concern for both protection and use of important resources. All factors that may be relevant to the proposal must be considered including the cumulative effects of it. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards and flood plain values (according to Executive Order 11988), land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the placement of dredged or fill materials in waters of the United States, a permit will be denied if the discharge that would be authorized would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria, a permit will be granted unless the District Engineer decides that it would be contrary to the public interest.

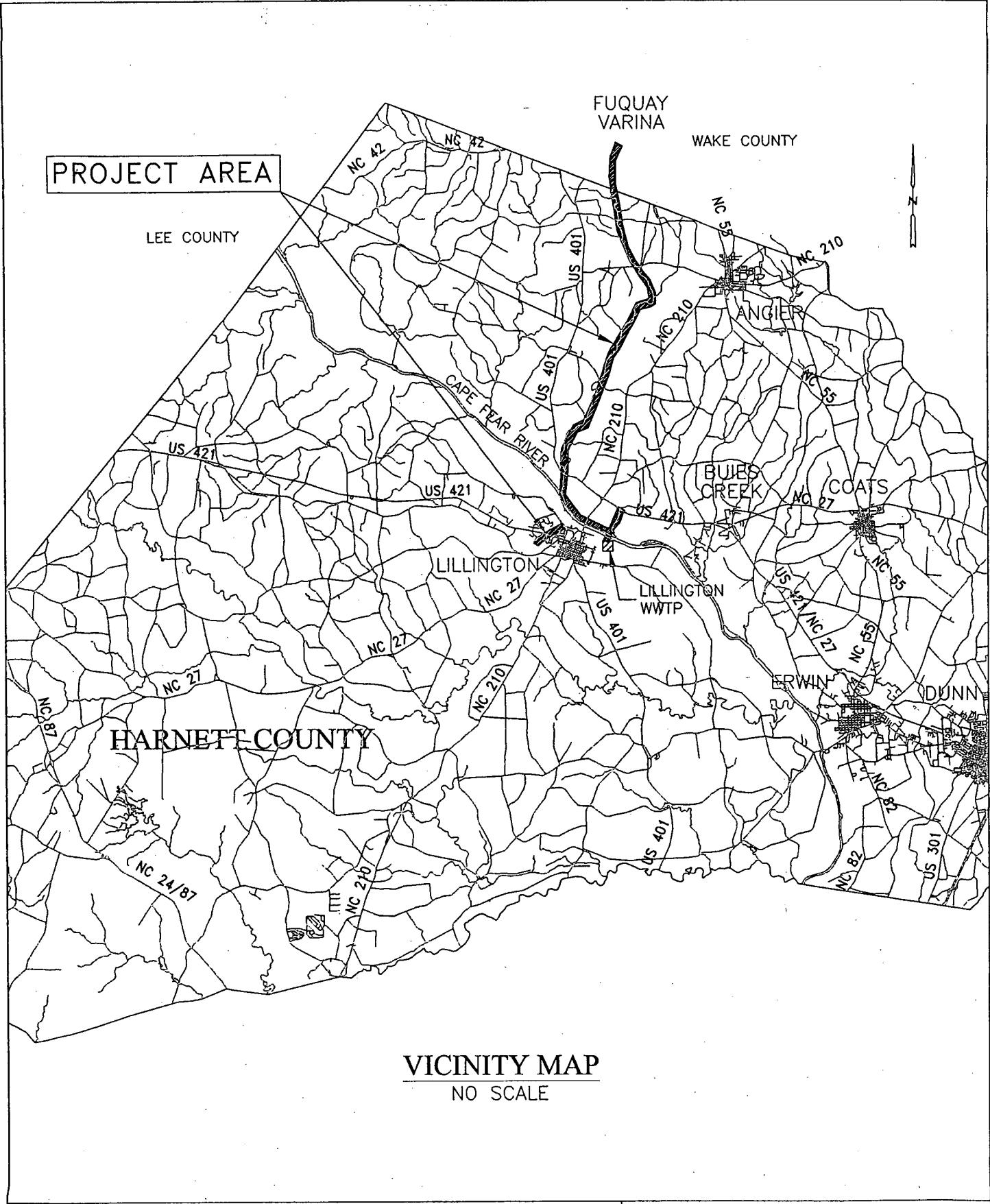
The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials; Indian Tribes and other interested parties to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to decide whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to decide the need for a public hearing and to decide the public interest of the proposed activity.

Generally, the decision whether to issue this Department of the Army (DA) permit will not be made until the North Carolina Division of Water Quality (NCDWQ) issues, denies, or waives State certification required by Section 401 of the Clean Water Act. The NCDWQ considers whether the proposed activity will comply with Sections 301, 302, 306, and 307 of the Clean Water Act. The application and this public notice for the Department of the Army (DA) permit serves as application to the NCDWQ for certification.

Additional information regarding the Clean Water Act certification may be reviewed at the offices of the Wetlands/401 Unit, NCDWQ, and 2321 Crabtree Boulevard, Raleigh, North Carolina 27604-2260. Copies of such materials will be furnished to any person requesting copies upon payment of reproduction cost.

All persons desiring to make comments regarding the application for Clean Water Act certification should do so in writing delivered to the North Carolina Division of Water Quality (NCDWQ), 1621 Mail Service Center, Raleigh, NC 27699-1621, on or before September 1, 2003, Attn: Mr. John Dorney.

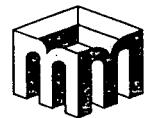
Written comments pertinent to the proposed work, as outlined above, will be received in the Corps of Engineers, Wilmington District, Wilmington Regulatory Field Office, Attn: Ms. Jennifer Frye, Post Office Box 1890, Wilmington, North Carolina, 28402-1890, until 4:15 p.m., January 22, 2004, at telephone (910) 251-4923.



VICINITY MAP
NO SCALE

HARNETT-FUQUAY REGIONAL WW

HARNETT COUNTY - NORTH CAROLINA



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CONSULTING ENGINEERS
ASHEBORO, NORTH CAROLINA

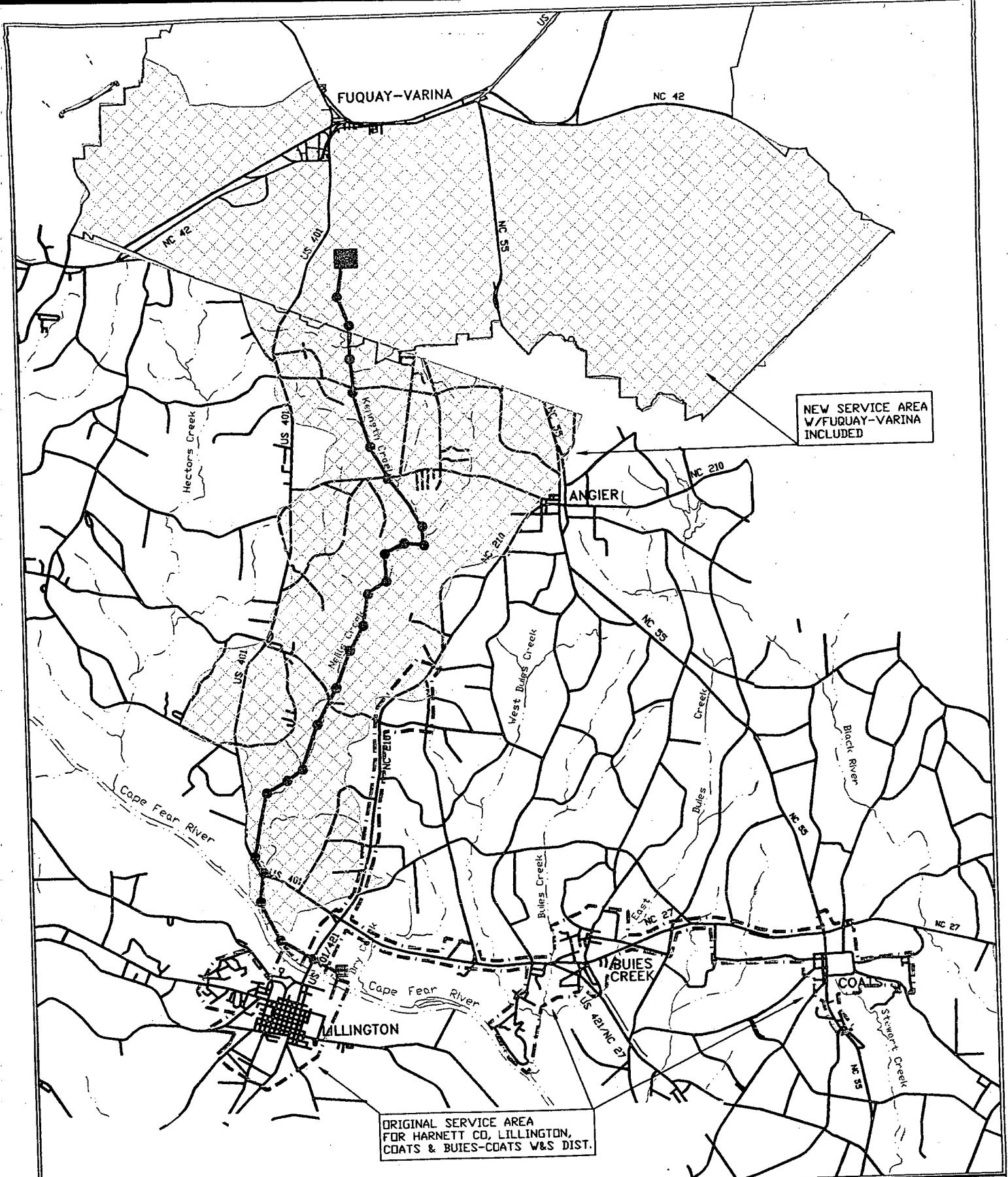


Figure 1.1

Scale: 1"=10000'

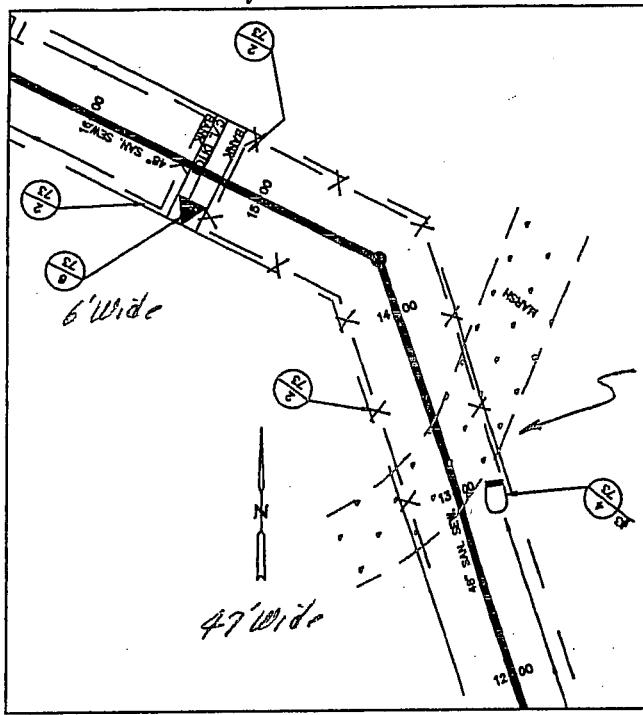
REGIONAL WW SERVICE AREA

ENVIRONMENTAL ASSESSMENT
HARNETT-FUQUAY VARINA 201



Site 1 b - Ditch

Temporary Impact = 0.008Ac = 60 L.F.
E 2,058,559 N 602,650



Site 1 a - Forested Wetlands

Temporary Impact = 0.055Ac

E 2,058,689

N 602,502

Permanent Impact = 0.013Ac

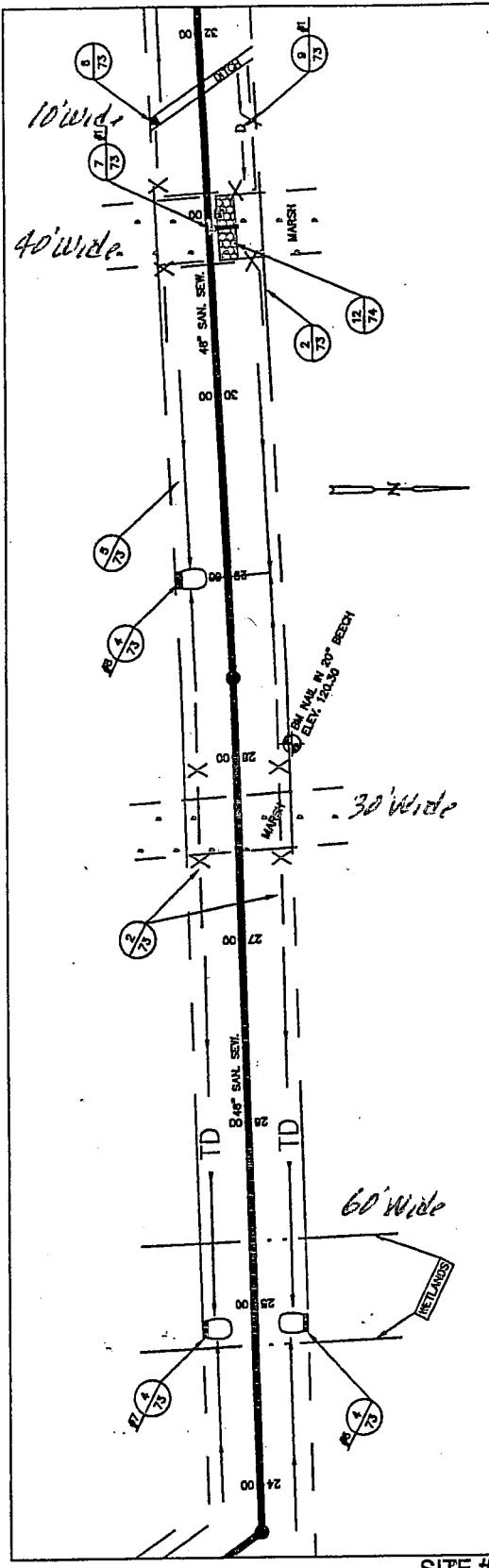
Permanent Impacts across wetlands
are based on maintaining a 12' wide
flowed access for Maint. All other areas
will be allowed to return to its natural
Forested State.

MAP #3
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
48" SEWERLINE



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Site 2 d - Ditch
Temporary Impact = 0.012 Ac = 55 LF

E 2,057,222
N 603,238

Site 2 c - Forested Wetlands
Temporary Impact = 0.044 Ac
Permanent Impact = 0.011 Ac

E 2,057,298
N 603,241

Site 2 b - Forested Wetlands
Temporary Impact = 0.033 Ac

E 2,057,628

N 603,256

Permanent Impact = 0.008 Ac

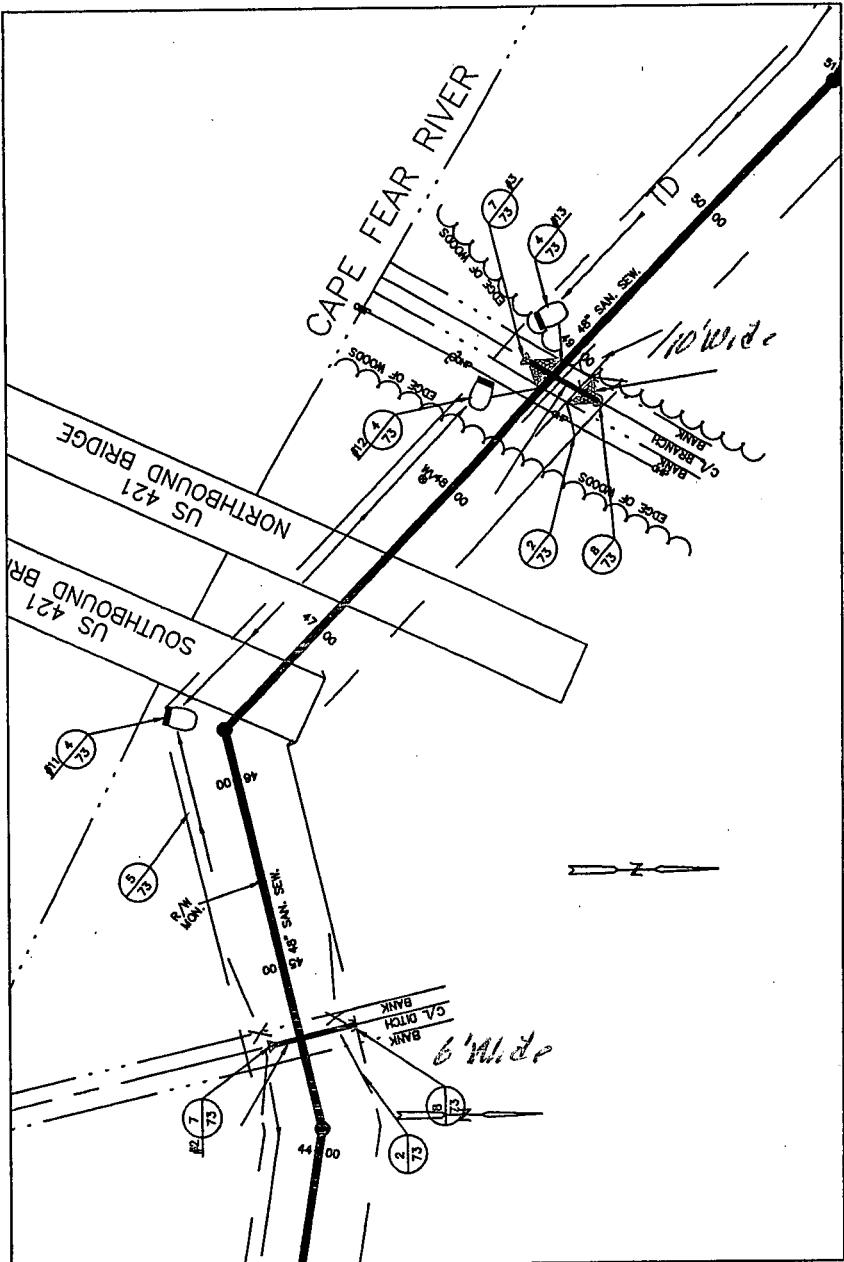
Site 2 a - Forested Wetlands
Temporary Impact = 0.066 Ac

E 2,057,887

N 603,264

Permanent Impact = 0.016 Ac

MAP #4
SCALE: 1"=100'



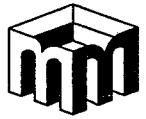
SITE #3

Site 3 b - Branch
Permanent Impact =
0.0.10 Ac = 42 LF.
E 2,055,589
N 603,375
Pipe for Maint Rd.

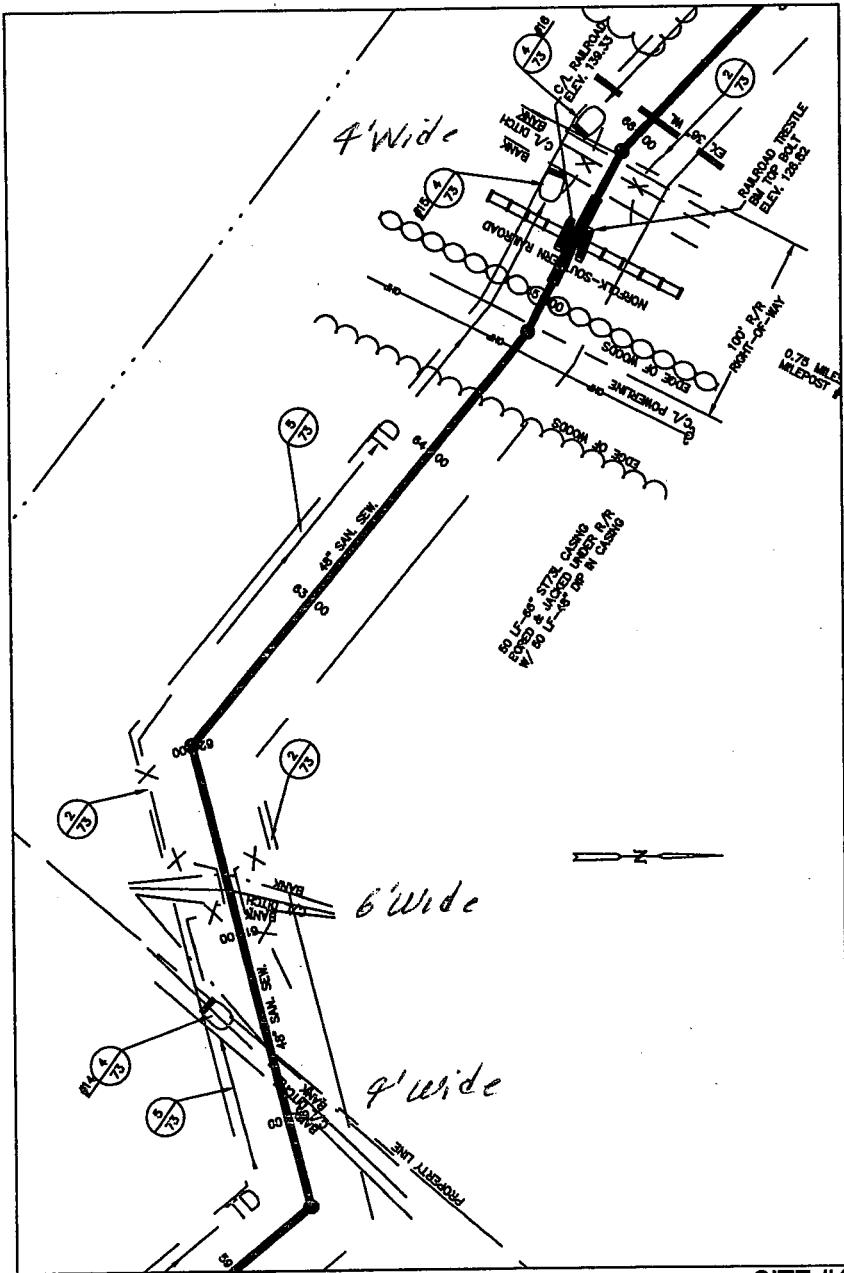
Site 3 a - Ditch
Permanent Impact =
0.006 Ac = 42 LF.
E 2,055,937
N 603,239
Pipe for Main Rd.

MAP #5
SCALE: 1"=100'

**HARNETT/WAKE SANITARY SEWER SYSTEM
48" SEWERLINE**



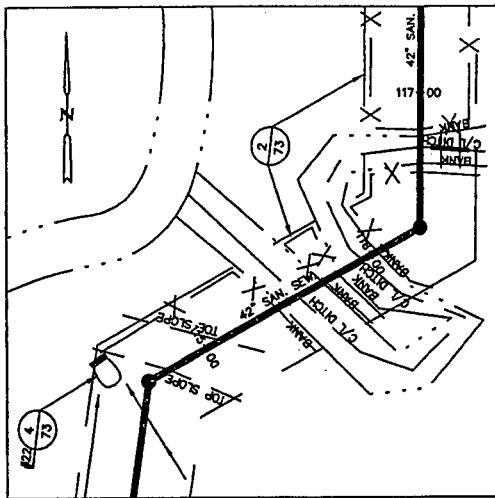
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ASHEBORO, NORTH CAROLINA



Site 4-c Ditch
 Temporary Impact =
 0.006Ac = 60LF
 E 2,054,309
 N 604,306

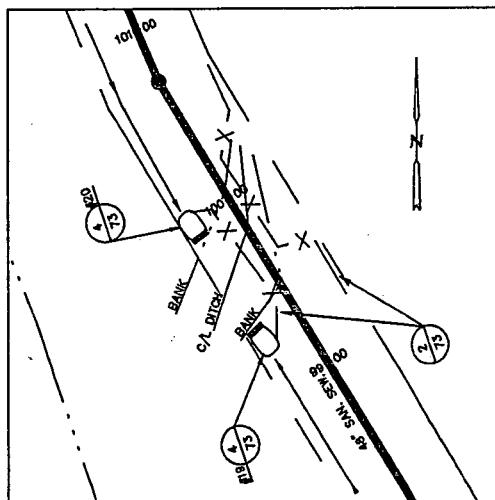
Site 4b-Ditch
 Temporary Impact =
 0.008Ac = 60LF.
 E 2,054,684
 N 604,103

Site 4a - Ditch
 Temporary Impact =
 0.006Ac = 60LF.
 E 2,054,778
 N 604,125



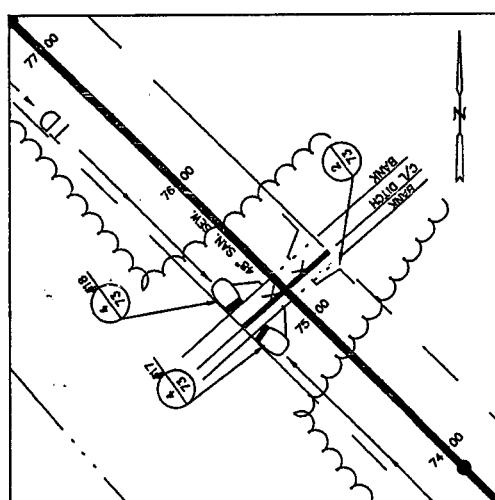
SITE #7

Creek
 Pipe on Piers over Creek
 Temporary Impact = 0.003Ac = 36 LF.
 E 2,052,523
 N 608,573



SITE #6

Ditch
 Temporary Impact = 0.009Ac = 60 LF.
 E 2,052,463
 N 607,073

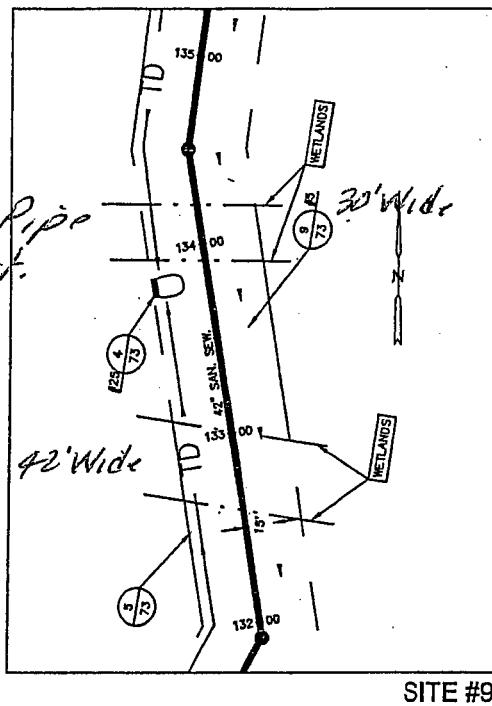


SITE #5

Branch
 Temporary Impact = 0.007Ac = 60 LF.
 E 2,053,629
 N 604,961

MAP #7
 SCALE: 1"=100'

Exposed Pipe
above Exist.
Grade



SITE #9

Site 9 b - Forested Wetlands
Permanent Impact = 0.012 ac.
Pipe above grade

Temporary Impact = 0.019 ac
E 2, 052, 651
N 610, 205

Site 9 a - Forested Wetlands
Temporary Impact = 0.021 ac.
Permanent Impact = 0.017 ac
Pipe above Grade
E 2, 052, 623
N 610, 078

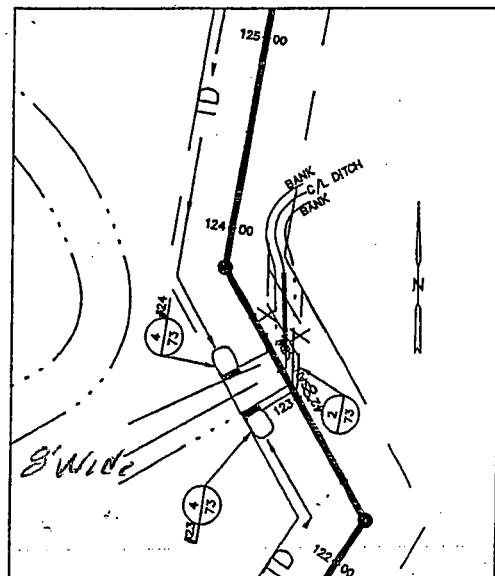
Assume 40' Wide Cleared Area
for Exposed Pipe

Permanent Impact for Exposed
Pipe will be 18' Wide

Branch

Pipe on Piers over Branch

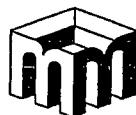
Temporary Impact = 0.007 ac = 40 LF



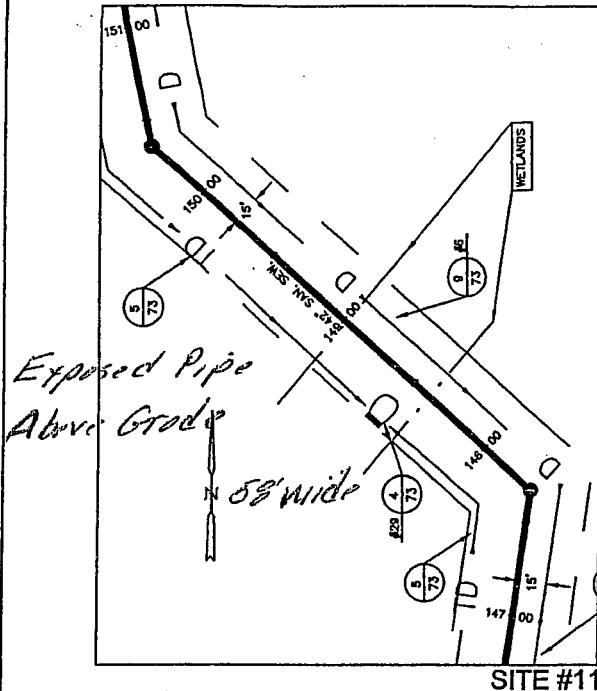
SITE #8

MAP #8
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE



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Forested Wetlands (Cut within last 5 yr.)

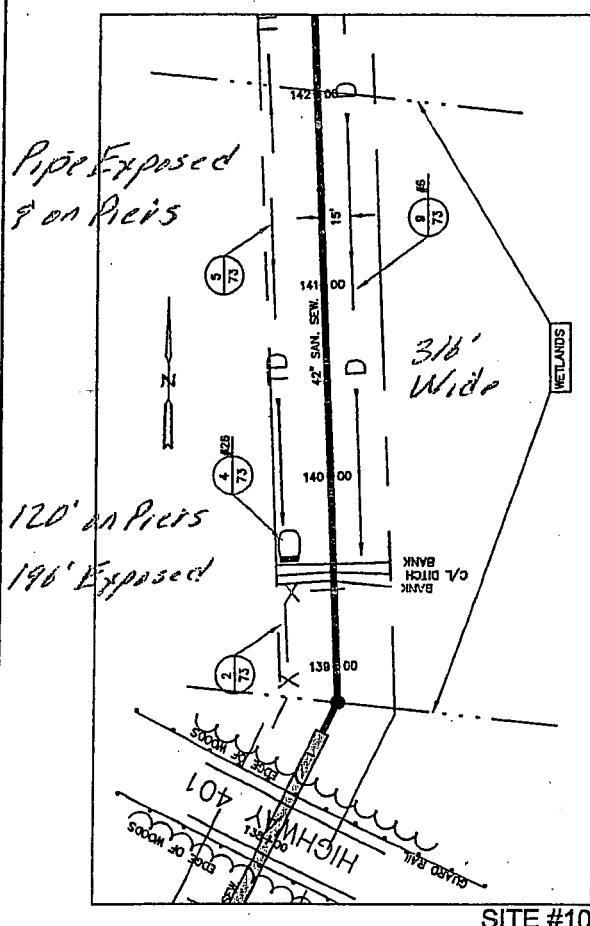
Permanent Impact = 0.024 Ac

Temporary Impact = 0.029 Ac

E 2,052,736

N 611,607

Pipe above grade



Forested Wetlands (Cut within last 5 yr.)

Temporary Impact = 0.059 Ac

Permanent Impact = 0.131 Ac

E 2,052,758

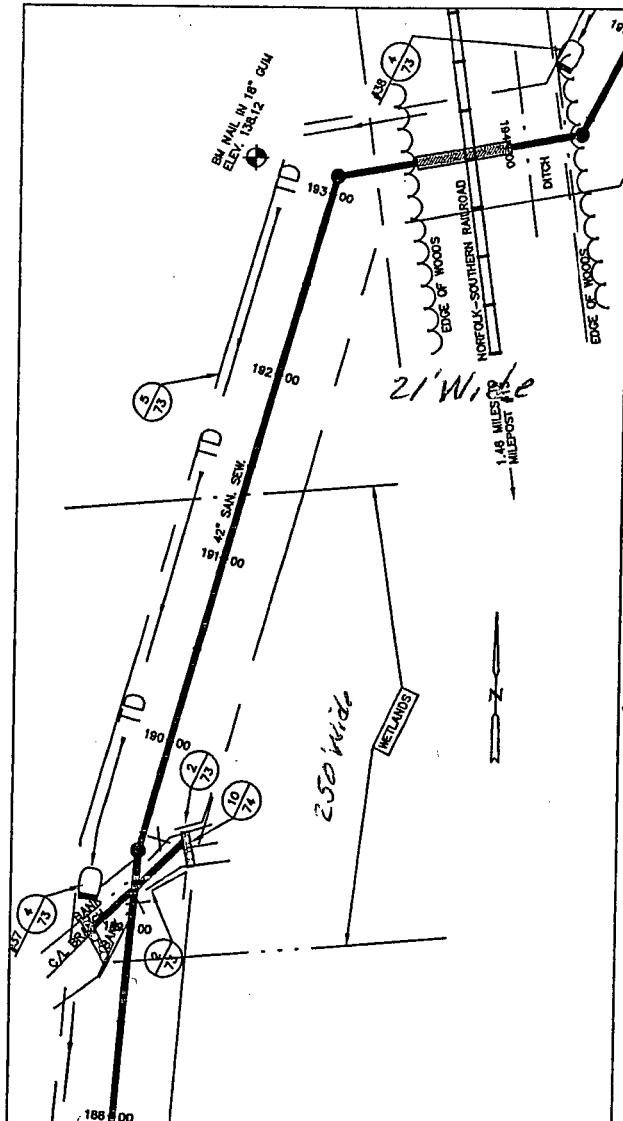
N 610,771

Exposed Pip

Assume 40' Wide Const Area for
exposed Pipe.

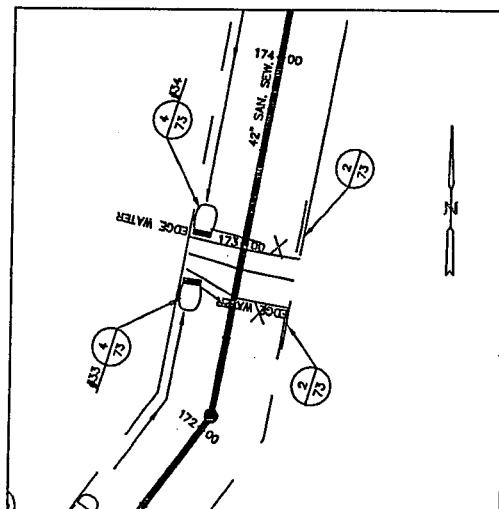
Permanent Impact for Exposed Pipe
will be 12' Wide

MAP #9
SCALE: 1"=100'



SITE #13

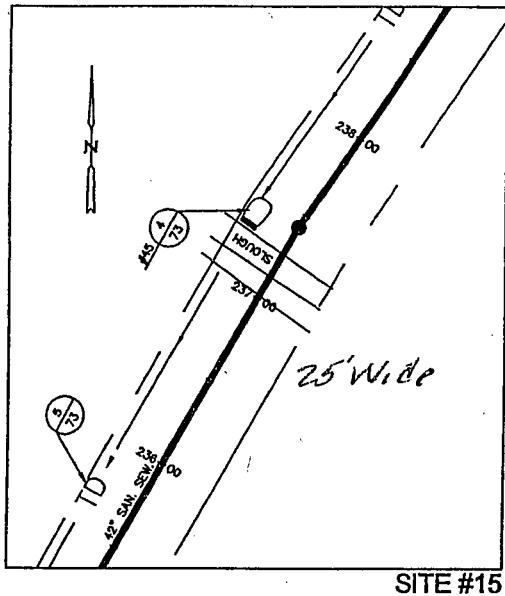
5, to 13 b Ditch
 Temporary Impact = 0.029 Ac = 60 LF
 E 2,053,637
 N 615,697



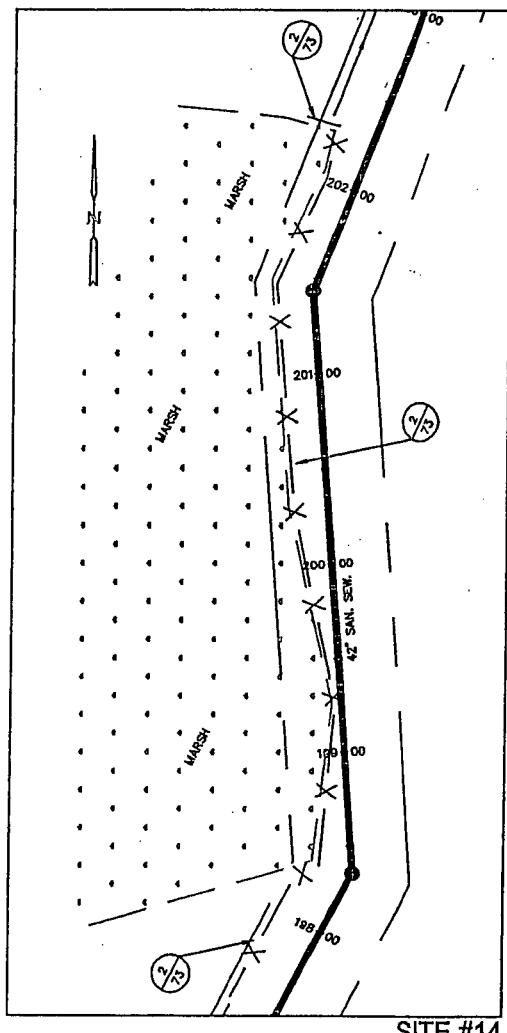
SITE #12

Forested Wetlands
 Temporary Impact = 0.024 Ac.
 E 2,052,961
 N 613,830
 Permanent Impact = 0.008 Ac

MAP #10
 SCALE: 1"=100'



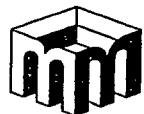
SITE #15



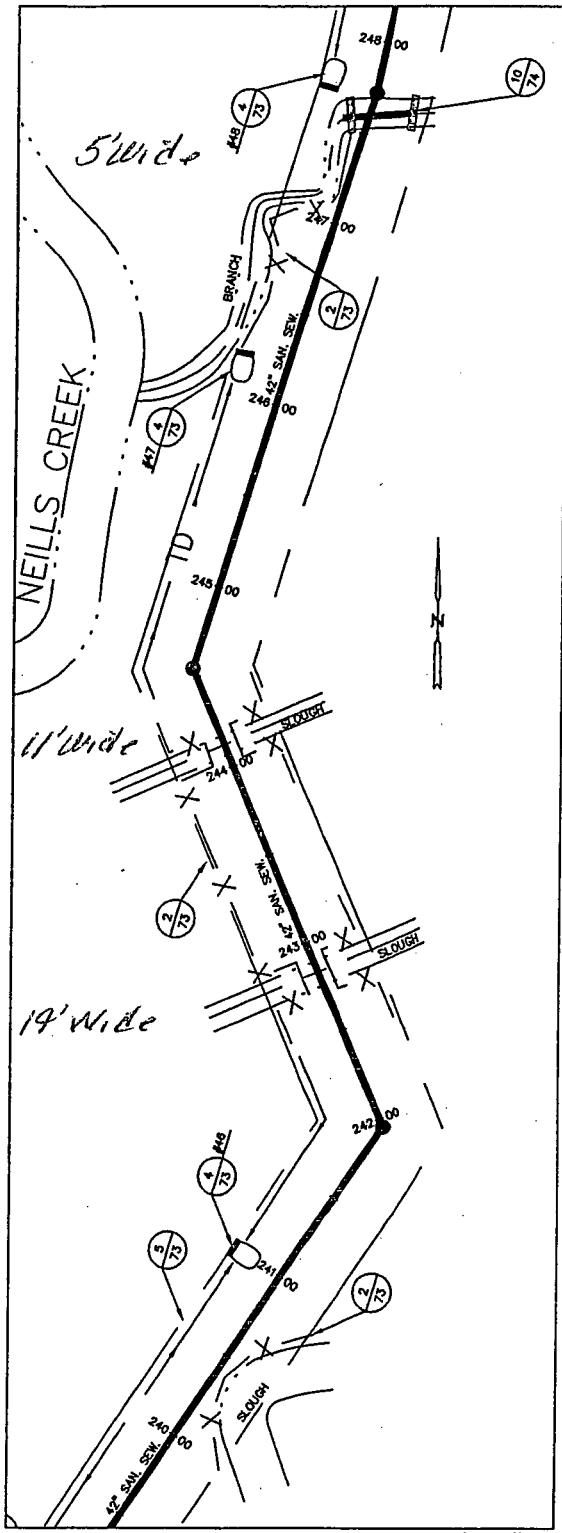
SITE #14

MAP #11
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE



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ASHEBORO, NORTH CAROLINA



SITE #16

Site 16 c Branch
Temporary Impact = 0.005 Ac
= 45 L.F.

E 2,056,241
N 619,863

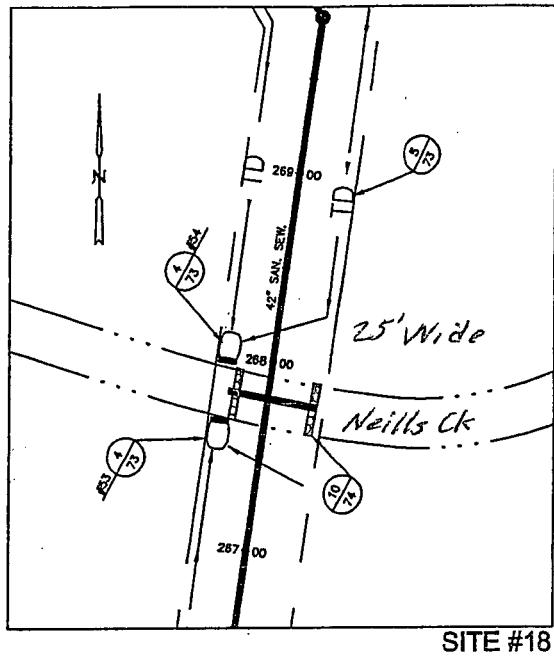
Site 16 b - Slough-Forested
Wetlands
Temporary Impact = 0.012 Ac.
E 2,056,171
N 619,530

Permanent Impact = 0.003 Ac

Site 16 a - Slough -Forested
Wetlands
Temporary Impact = 0.015 Ac.
E 2,056,222
N 619,413

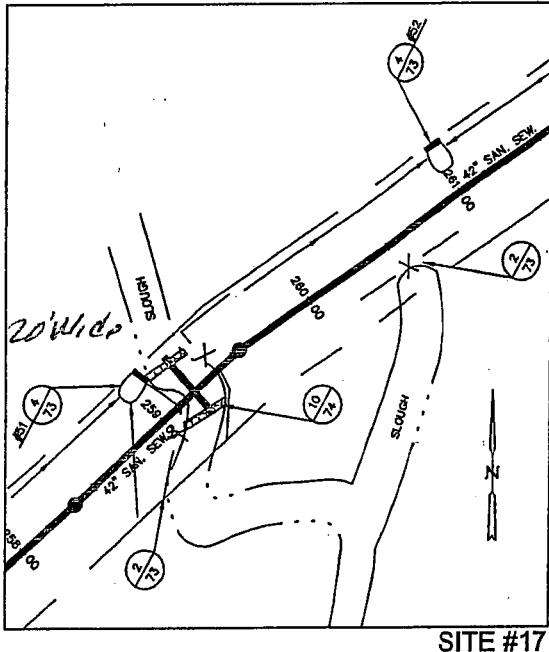
Permanent Impact = 0.004 Ac

MAP #12
SCALE: 1"=100'



Creek

Temporary Impact = 0.027 Ac = 486 ft²
E 2,057,185
N 621,596



Slough -Forested Wetlands

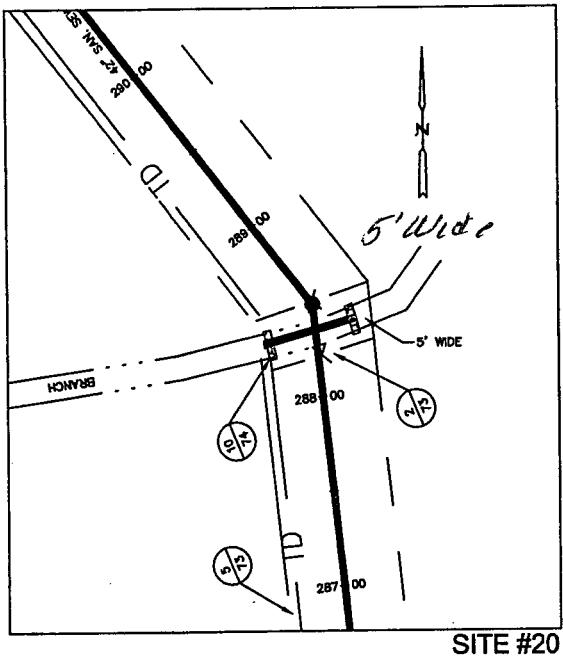
Temporary Impact = .0.029 Ac
E 2,056,814
N 620,899
Permanent Impact = 0.006 Ac

MAP #13
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE

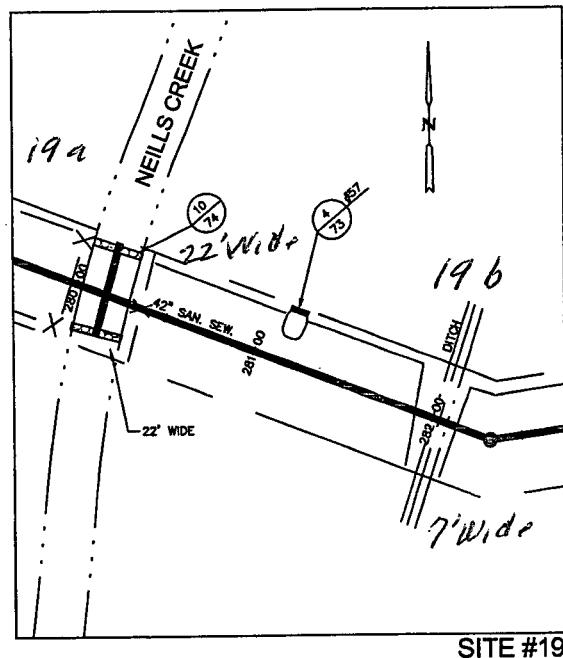


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Branch
Temporary Impact = 0.006 Ac = 48 L.F.
E 2,058,024
N 622,792

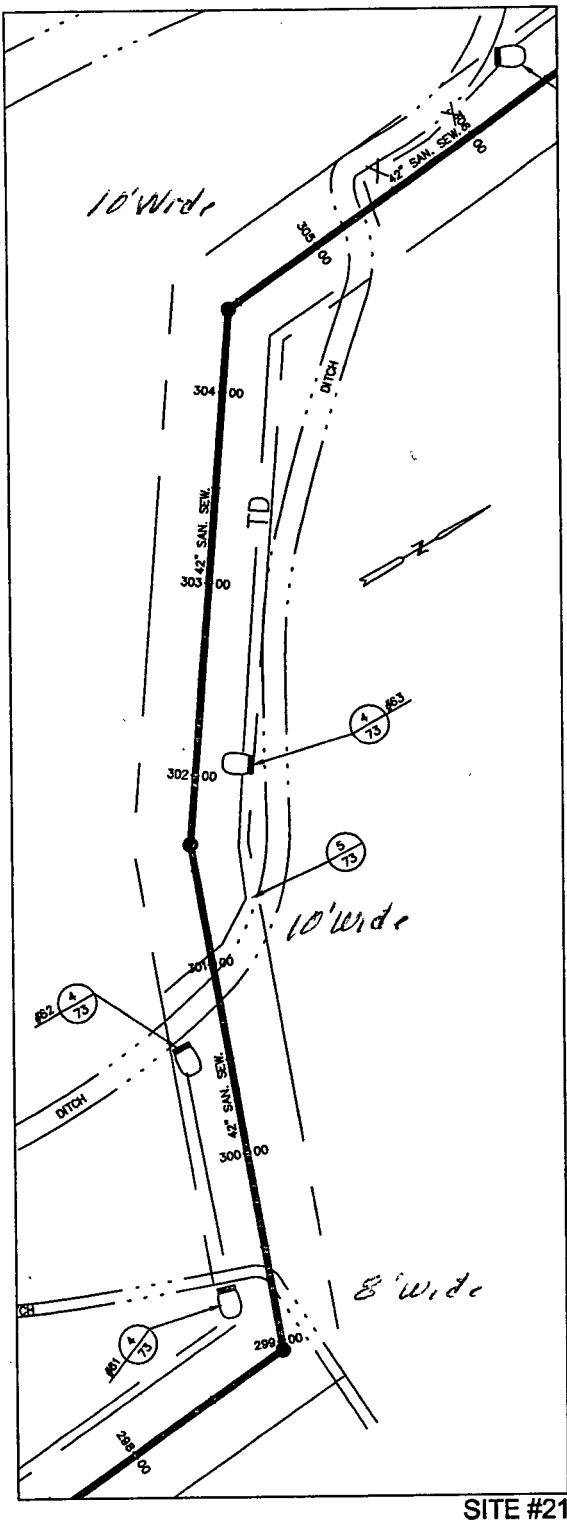
SITE #20



Site 19b - Ditch
Temporary Impact = 0.008 Ac = 48 L.F.
E 2,057,819
N 622,394

Site 19a - Creek
Temporary Impact = 0.009 Ac = 48 L.F.
E 2,057,647
N 622,463

MAP #14
SCALE: 1"=100'



Site 21c Ditch

Temporary Impact = 0.008Ac = 35 L.F.

E 2,057, 122

N 624, 091

Site 21 b - Ditch

Temporary Impact = 0.012Ac = 50 L.F.

E 2,057, 429

N 623, 805

Site 21 a - Branch

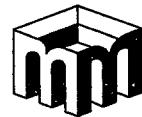
Temporary Impact = 0.015Ac = 84 L.F.

E 2,057, 577

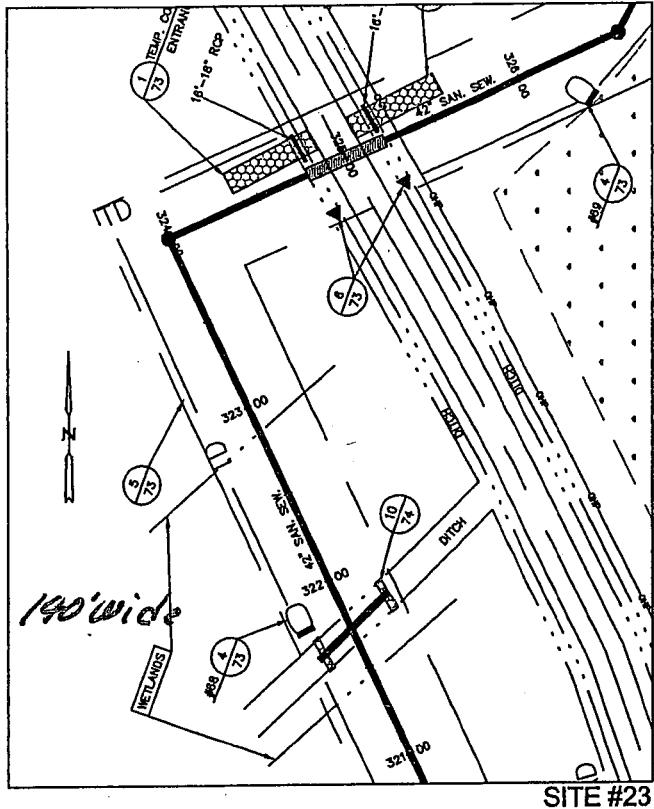
N 623, 754

MAP #15
SCALE: 1"=100'

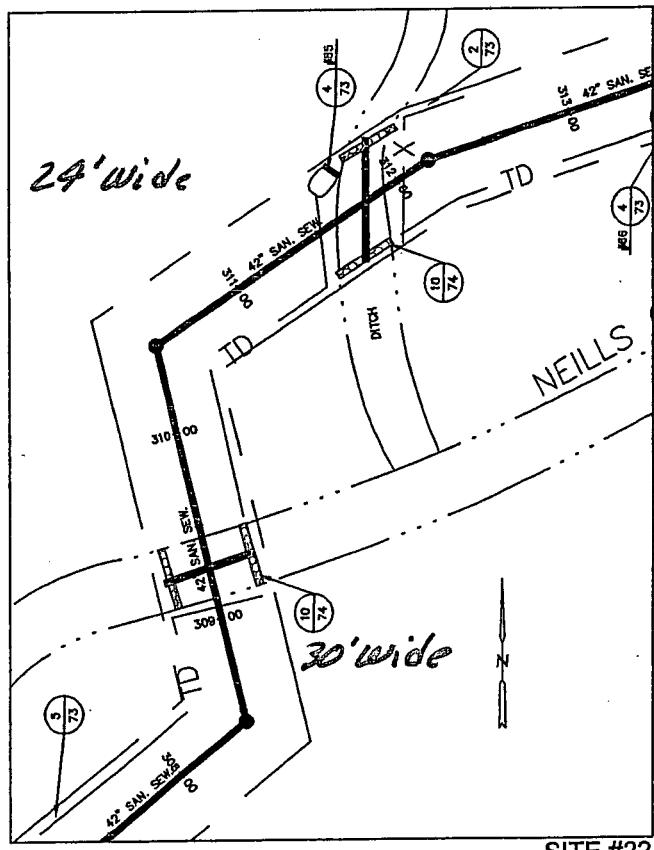
HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE



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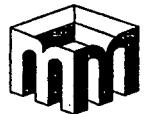
Forested Wetlands
 Temporary Impact = 0.154 Ac.
 E 2,057,781
 N 625,199
 Permanent Impact = 0.039 Ac

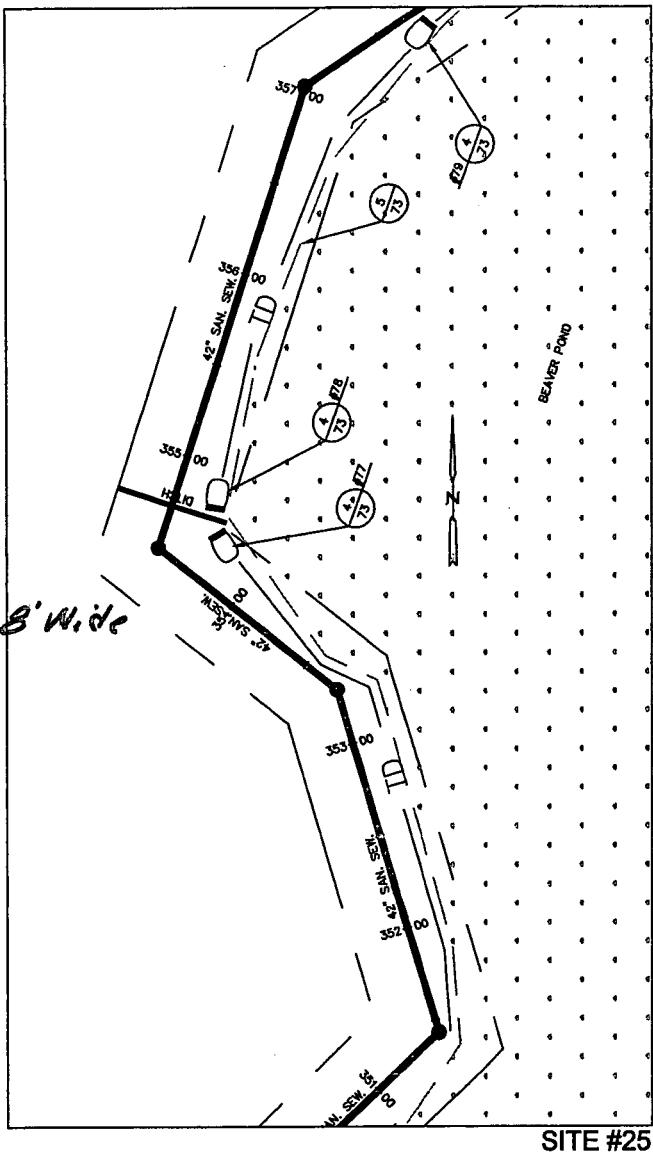


Site 22 b - Drain Canal
 Temporary Impact = 0.026 Ac
 = 48 L.F.
 E 2,057,268
 N 624,622

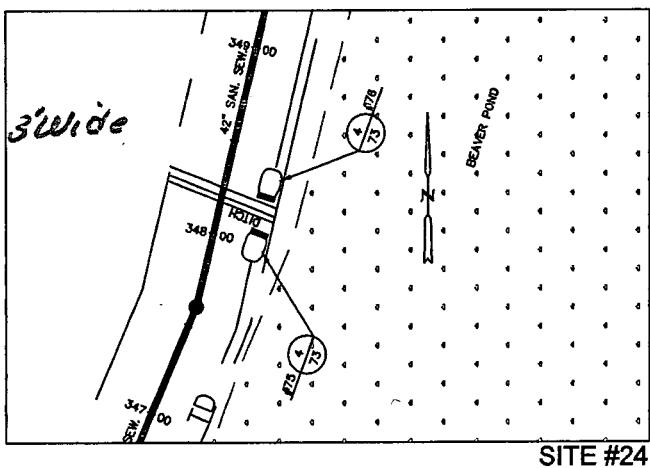
Site 22 a - Creek
 Temporary Impact = 0.033 Ac =
 40 L.F.
 E 2,057,182
 N 624,427

MAP #16
 SCALE: 1"=100'





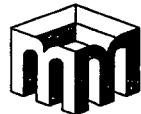
Ditch/Branch
Temporary Impact = 0.011 Ac.
= 48 LF.
E 2,058,528
N 627,738



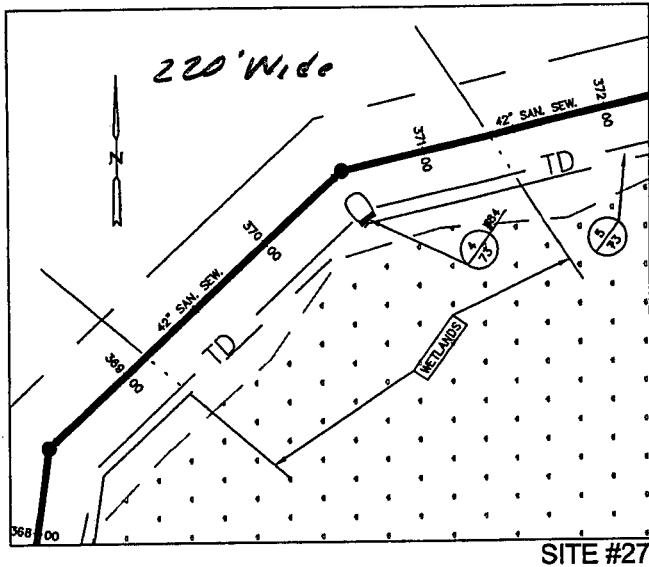
Ditch/Branch
Temporary Impact = 0.003 Ac
= 48 LF
E 2,058,528
N 627,188

MAP #17
SCALE: 1"=100'

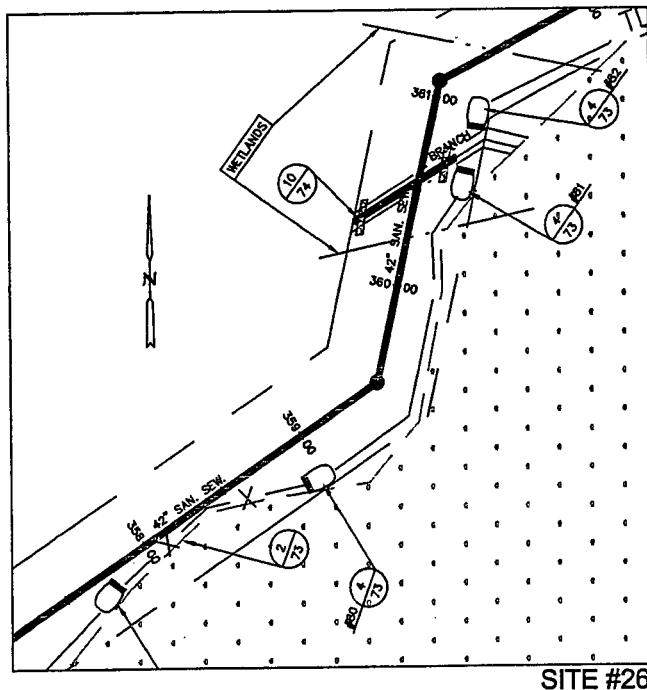
HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE



MARZIANO & MINIER, P.A.
CONSULTING ENGINEERS
ASHEBORO, NORTH CAROLINA



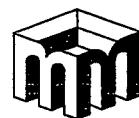
Forested Wetlands
Temporary Impact = 0.292 Ac.
Permanent Impact = 0.061 Ac.
E. 2,059,273
N 628,892



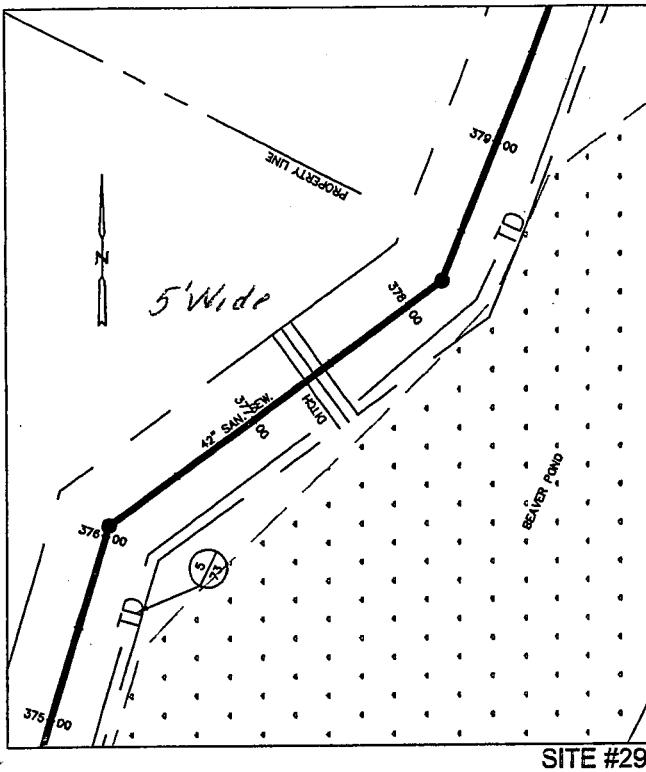
Forested Wetlands
Temporary Impact = 0.130 Ac
Permanent Impact = 0.032 Ac
E 2,058,824
N 628,215

MAP #18
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE

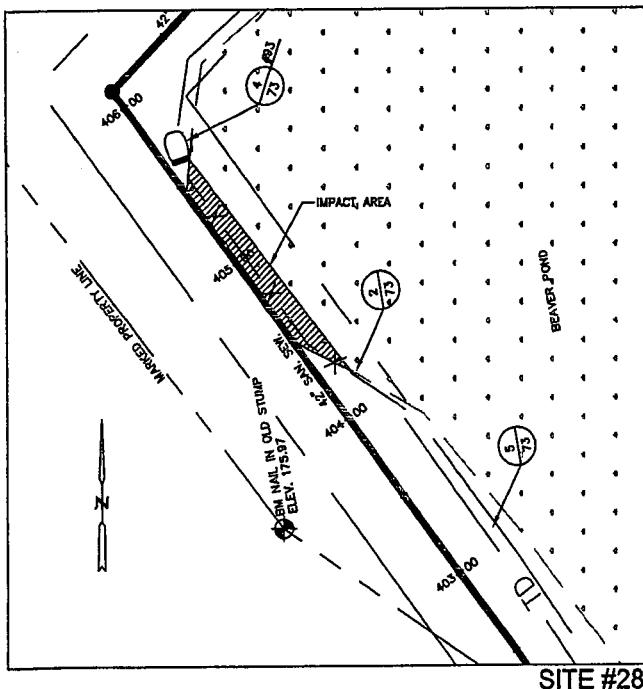


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ASHEBORO, NORTH CAROLINA



Ditch -

Temporary Impact = 0.006Ac = 48LF.
E 2,059,706
N 629,359



Beaver Pond

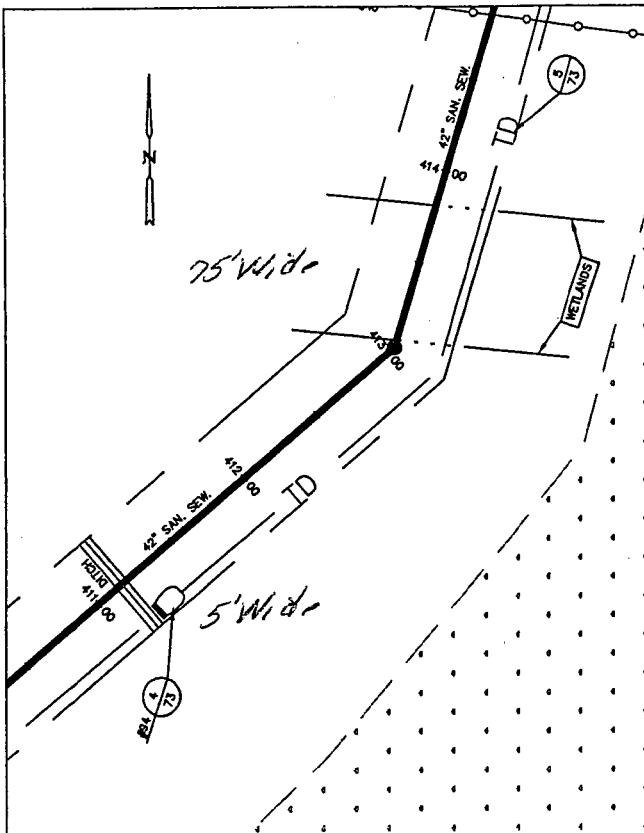
Temporary Impact = 0.045Ac
E 2,059,974
N 631,709

MAP #19
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE



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SITE #29-II

Site 29 II-6 Forested Wetlands

Temporary Impact = 0.081 Ac

Permanent Impact = 0.021 Ac

E 2,060,470

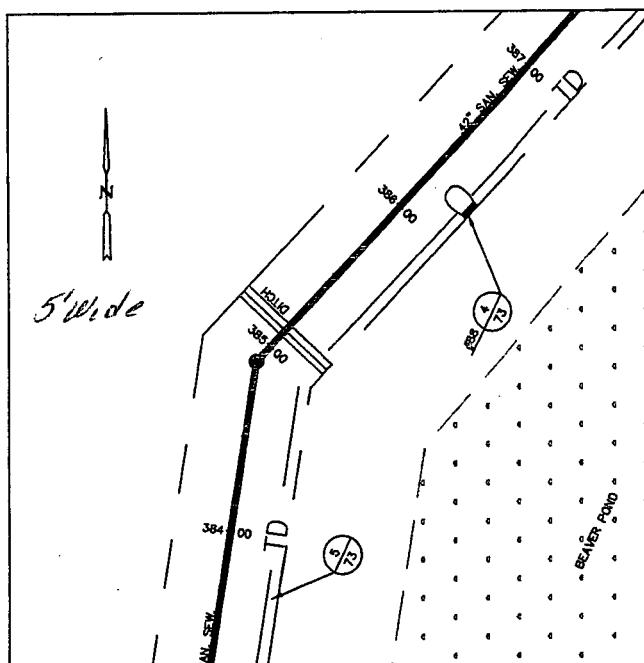
N 632,249

Site 29 II-a Ditch/Branch

Temporary Impact = 0.006 Ac = 98 L.F.

E 2,060,300

N 632,079



SITE #29-I

Ditch/Branch

Temporary Impact = 0.006 Ac = 98 L.F.

E 2,059,969

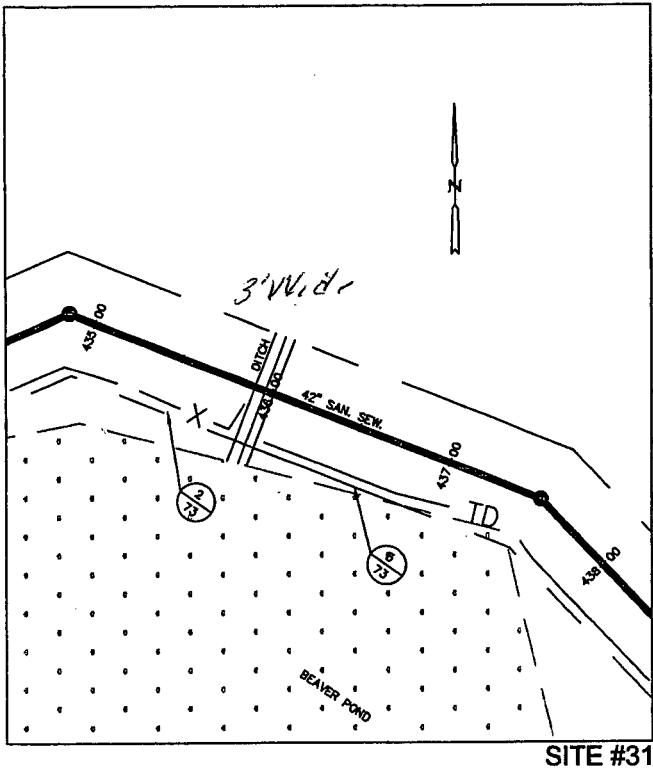
N 632,062

MAP #19A
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE



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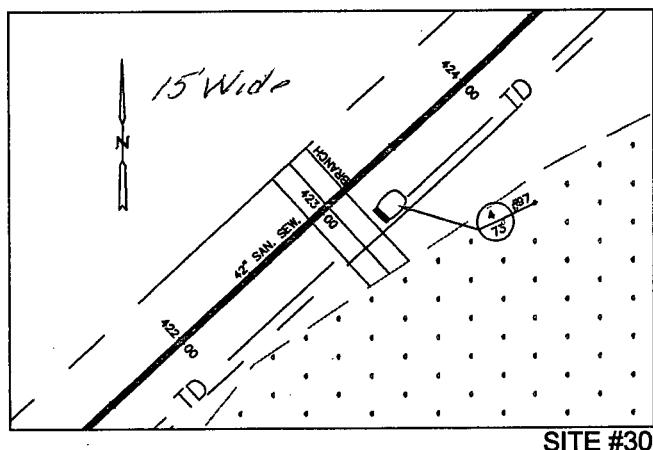


Ditch/Branch

Temporary Impact = 0.003 Ac = 48 LF

E 2,061,601

N 633,317



Branch

Temporary Impact = 0.017 Ac = 48 LF

E 2,060,534

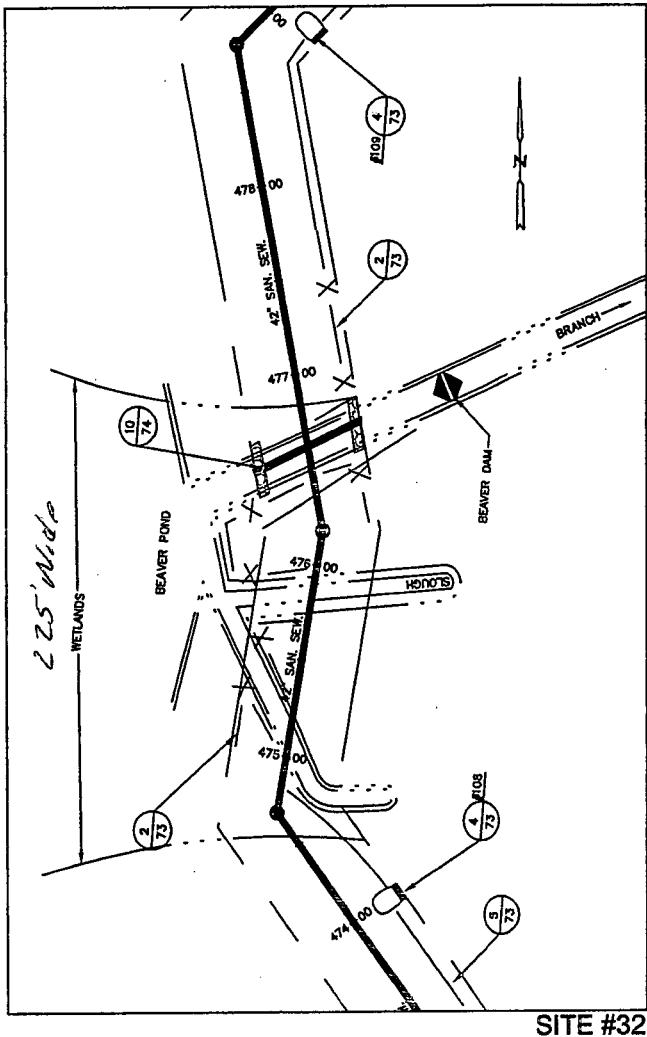
N 633,039

MAP #20
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE



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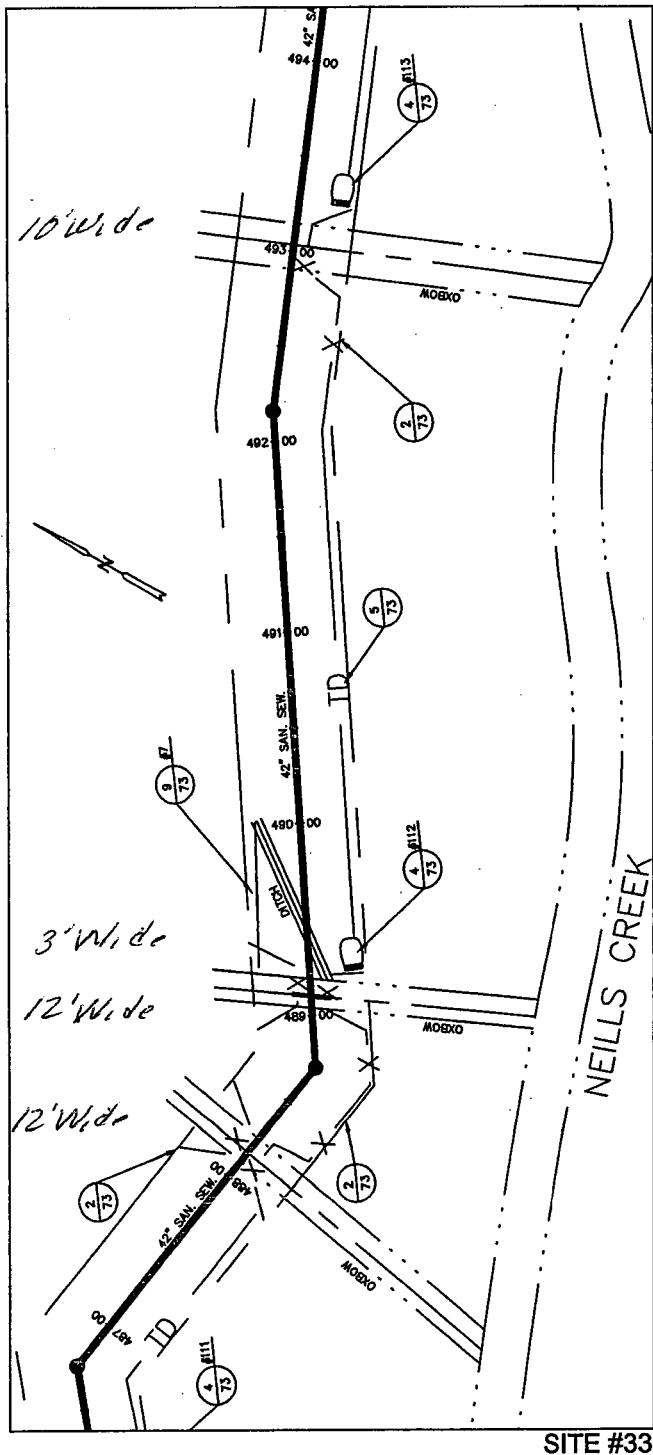
Beaver Pond/Forested Wetlands
 Temporary Impact = 0.249Ac
 Permanent Impact = 0.063Ac
 E 2,063,058
 N 635,680

MAP #21
 SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
 42" SEWERLINE



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Side 33d - Forested Wetlands
Temporary Impact = 0.011 Ac
Permanent Impact = 0.003 Ac

EZ, 064,038
N 636, 776

Site 33C - Ditch
Temporary Impact = 0.004 Acre = 636 F.
E 2063,740
N 636,598

Site 336 - Forested Wetlands
Temporary Impact = 0.013 Ac.
Permanent Impact = 0.003 Ac.
E 2,063,704
N 636,577

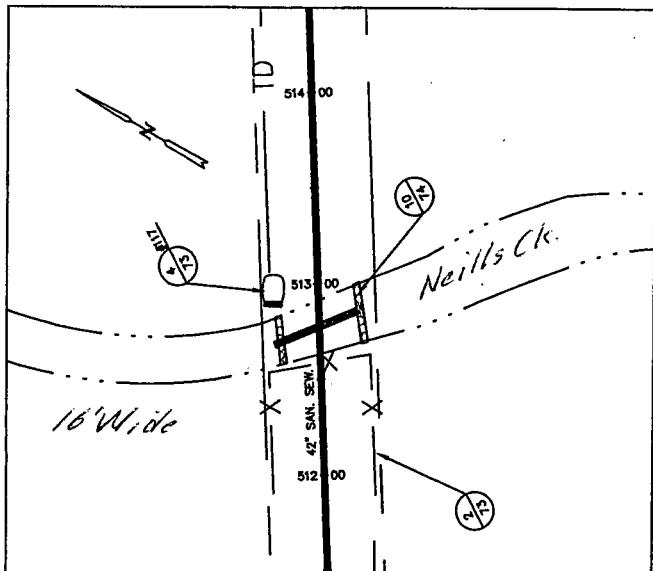
Site 33 a - Forested Wetlands
Temporary Impact = 0.013 Acre
Permanent Impact = 0.003 Acre
E. 2,063,620
N 636,560

MAP #22
SCALE: 1"=100'

**HARNETT/WAKE SANITARY SEWER SYSTEM
42" SEWERLINE**



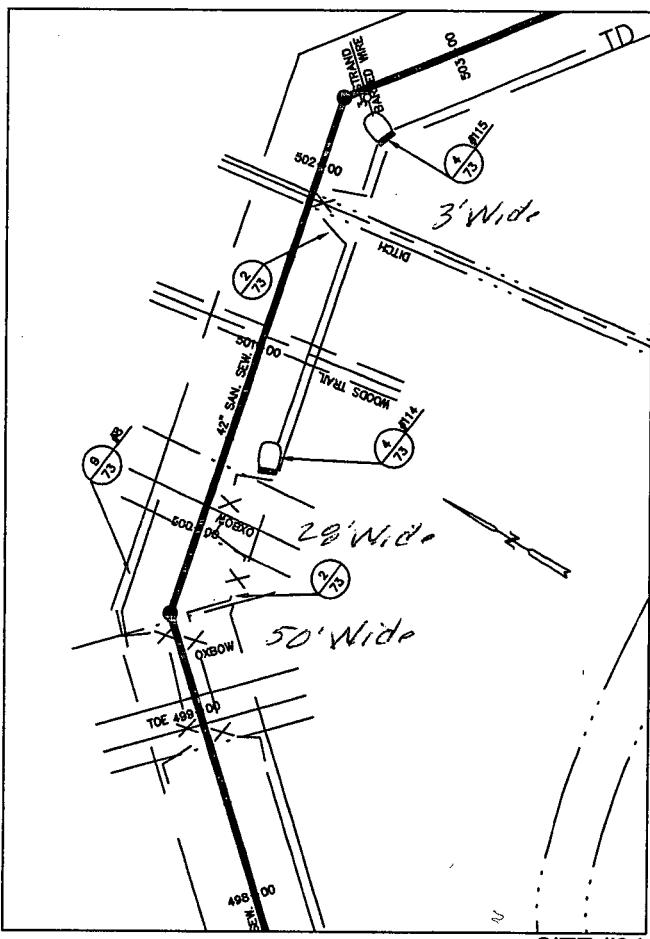
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Creek

Temporary Impact = 0.018 Ac = 48 LF.
E 2,065,607
N 636,827

SITE #35



Site 34c - Ditch

Temporary Impact = 0.003 Ac = 48 LF.
E 2,064,786
N 637,183

Site 34b - Forested Wetlands

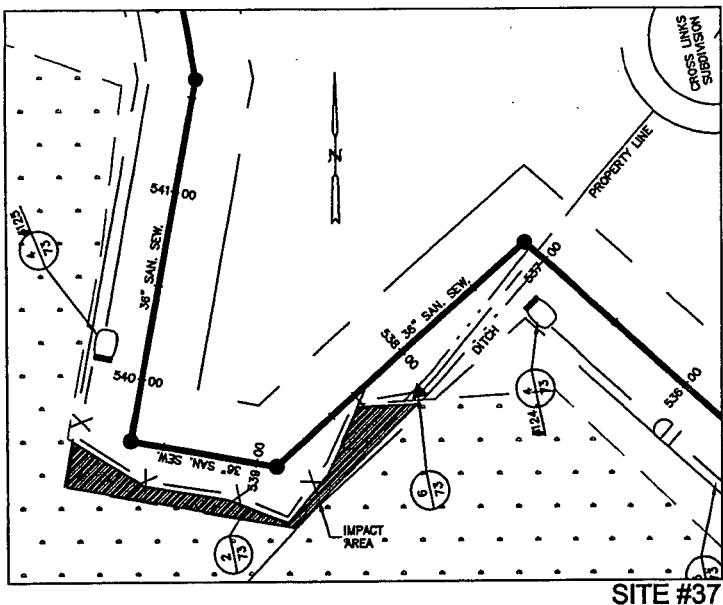
Temporary Impact = 0.031 Ac
Permanent Impact = 0.008 Ac
E 2,064,625
N 637,152

Site 34a - Forested Wetlands

Temporary Impact = 0.055 Ac
Permanent Impact = 0.014 Ac
E 2,064,523
N 637,095

SITE #34

MAP #23
SCALE: 1"=100'

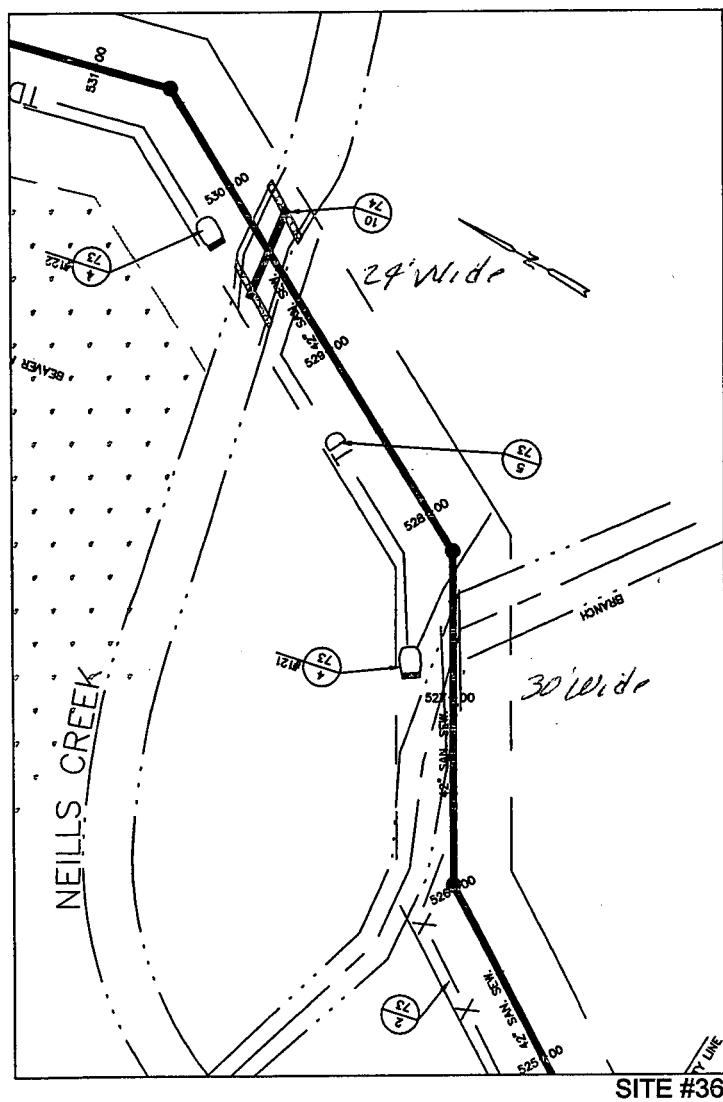


Beaver Pond

Temporary Impact = 0.056 A_C

E 2,065,480

N 638,669



Site 36-b Creek

Temporary Impact = 0.024 AIC
= 4.81 F

F 2,066,378

N 638,179

Site 36 e-Branch

$$\text{Temporary Impact} = 0.086 \text{ AL} = 125 \text{ L.F.}$$

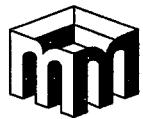
E 2,066,235

N 637,985

MAP #24
SCALE: 1"=100'

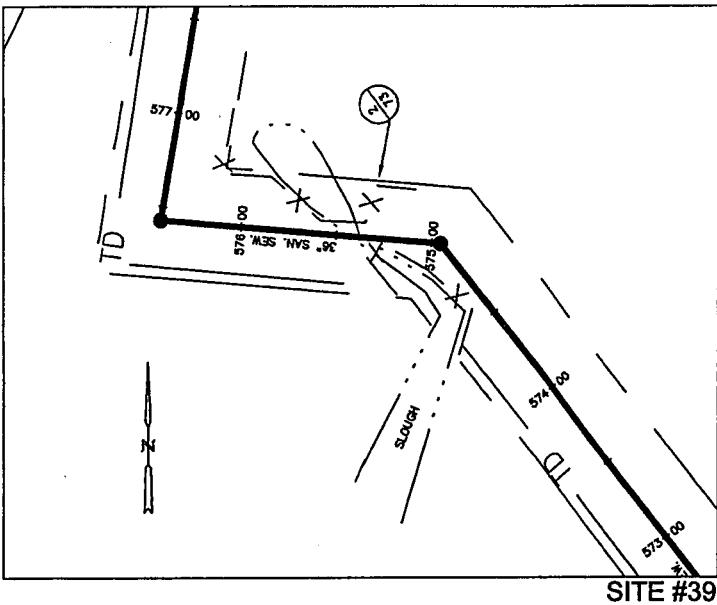
HARNETT/WAKE SANITARY SEWER SYSTEM

36" & 42" SEWERLINE

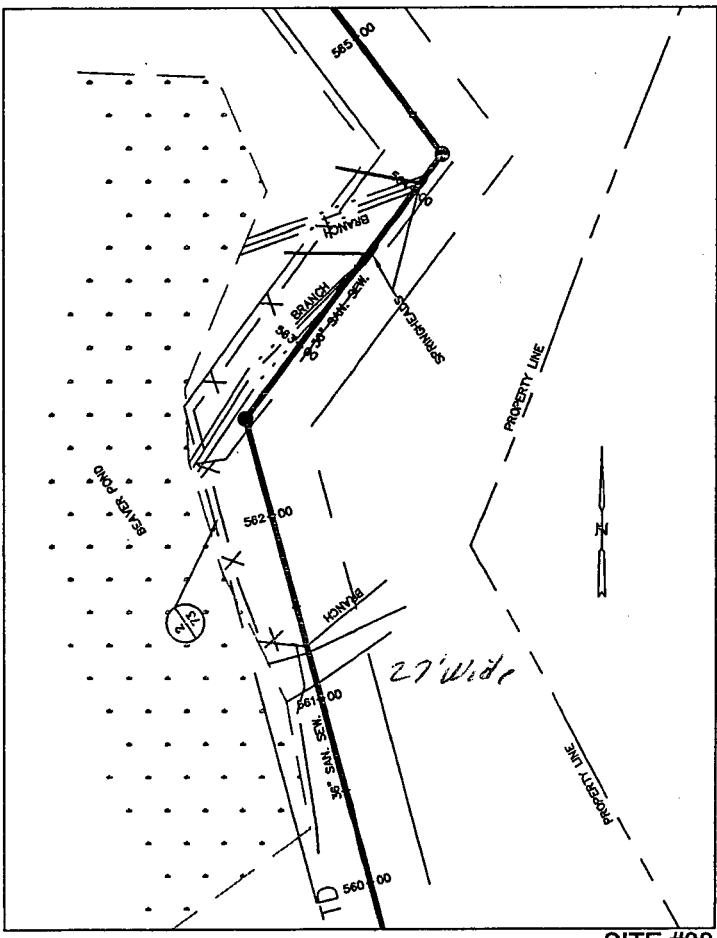


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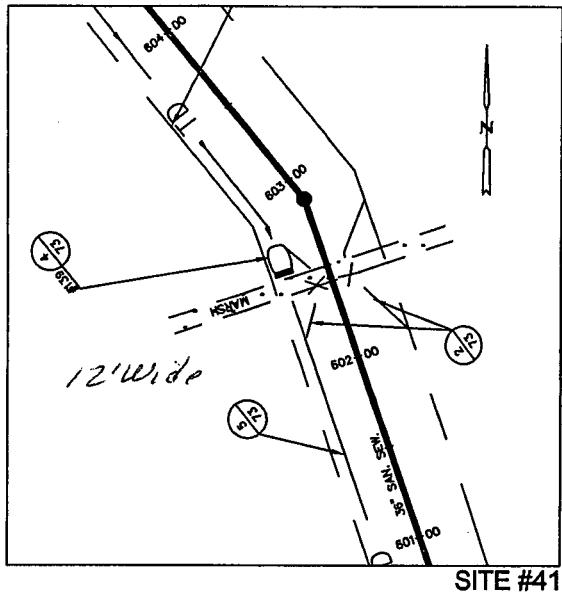
Forested Wetlands
Temporary Impact = 0.023 Ac.
Permanent Impact = 0.003 Ac.
E 2,064,336
N 641,306



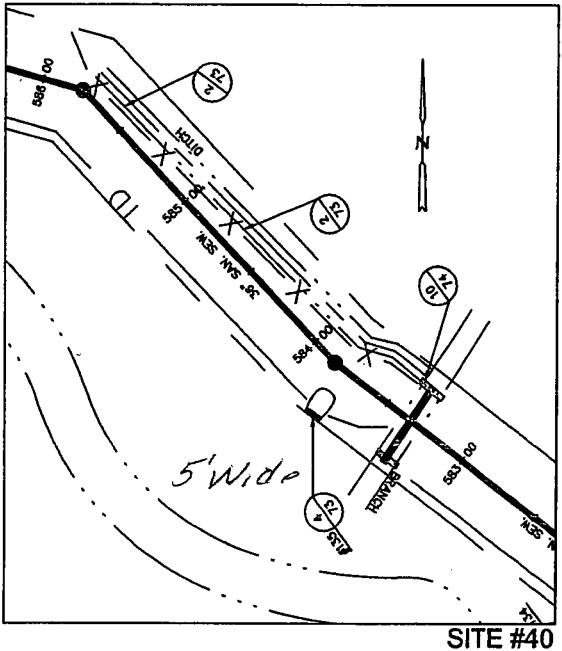
Site 38 b
Spring - Forested Wetlands
Permanent Impact = 0.030 Ac
E 2,065,138
N 640,641

Site 38 a - Branch
Temporary Impact = 0.022 Ac = 35 LF
E 2,065,097
N 640,416

MAP #25
SCALE: 1"=100'



Branch
 Temporary Impact = $0.011 A_c = 38 \text{ L.F.}$
 E 2,063,621
 N 643,117



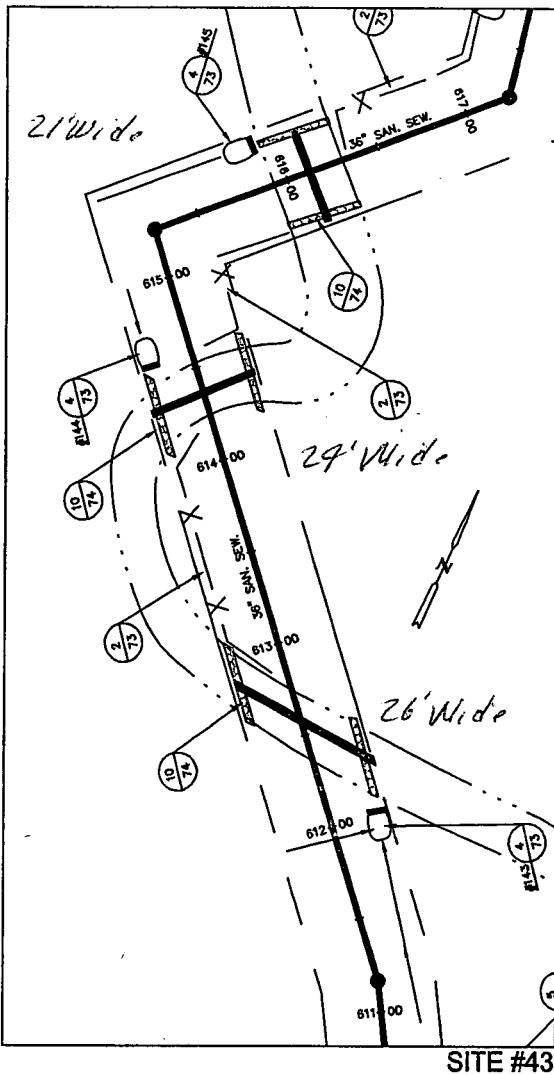
Branch
 Temporary Impact = $0.005 A_c = 38 \text{ L.F.}$
 E 2,064,057
 N 641,870

MAP #26
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
 36" SEWERLINE



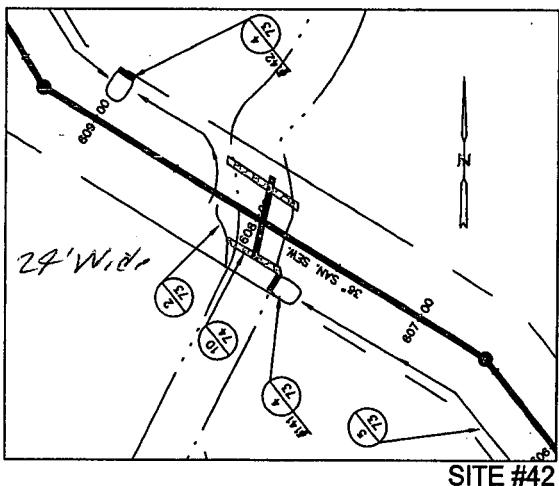
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Site 43 c - Creek
Temporary Impact = 0.023Ac = 48LF.
E 2,061,897
N 644,059

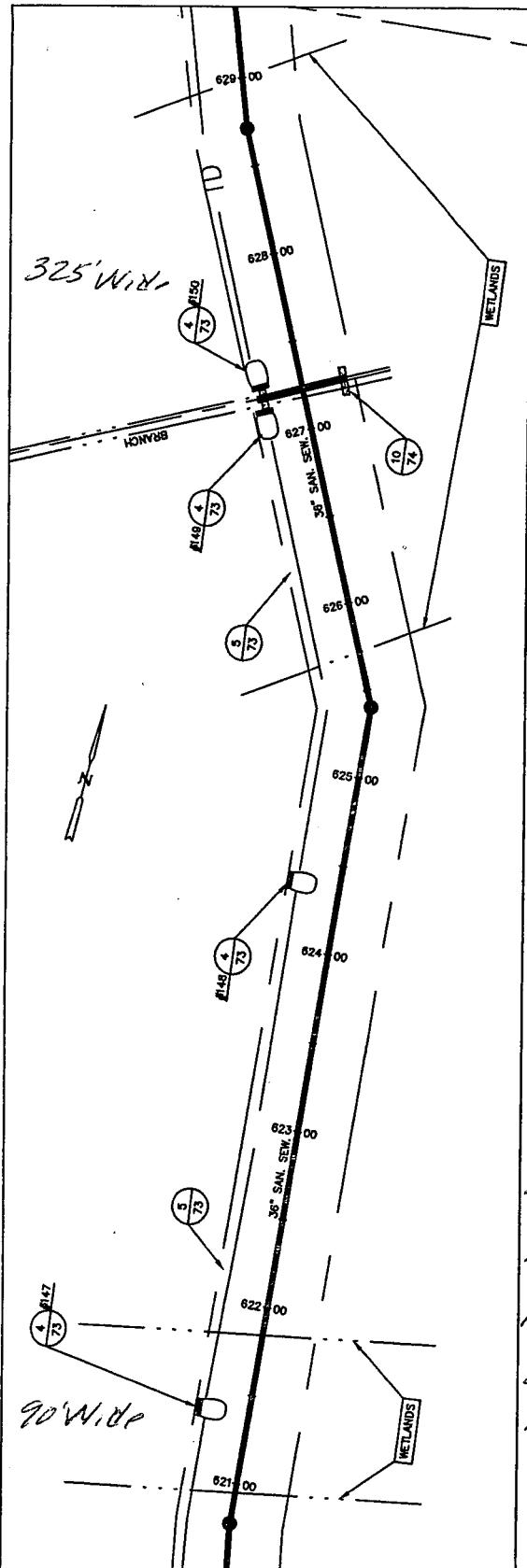
Site 43 b - Creek
Temporary Impact = 0.026Ac = 48LF.
E 2,061,897
N 643,933

Site 43 a - Creek
Temporary Impact = 0.034Ac = 48LF.
E 2,062,014
N 643,800



Creek
Temporary Impact = 0.026Ac = 48LF
E 2,062,321
N 643,966

MAP #27
SCALE: 1"=100'



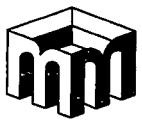
SITE #44

Site 44 b -Forested Wetlands
 Temporary Impact = 0.358 Ac
 Permanent Impact = 0.089 Ac
 E 2,061,775
 N 645,108

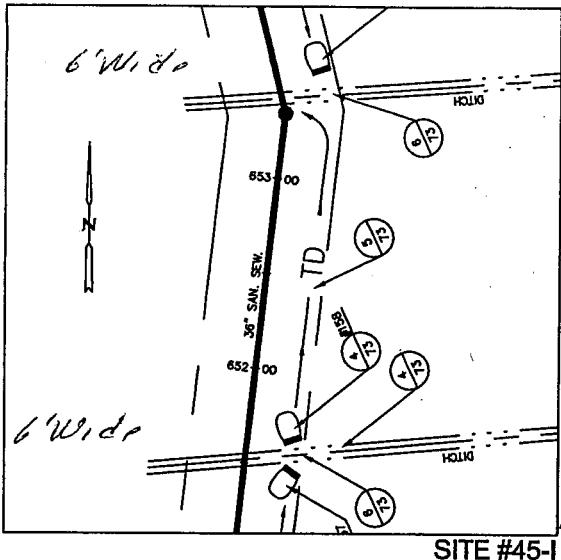
Site 44 a -Forested Wetlands
 Temporary Impact = 0.099 Ac
 Permanent Impact = 0.025 Ac
 E 2,061,898
 N 644,546

MAP #28
 SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
 36" SEWERLINE



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45-I b - Ditch

Temporary Impact = 0.007 Ac = 48 LF

E 2,060,965

N 647,376

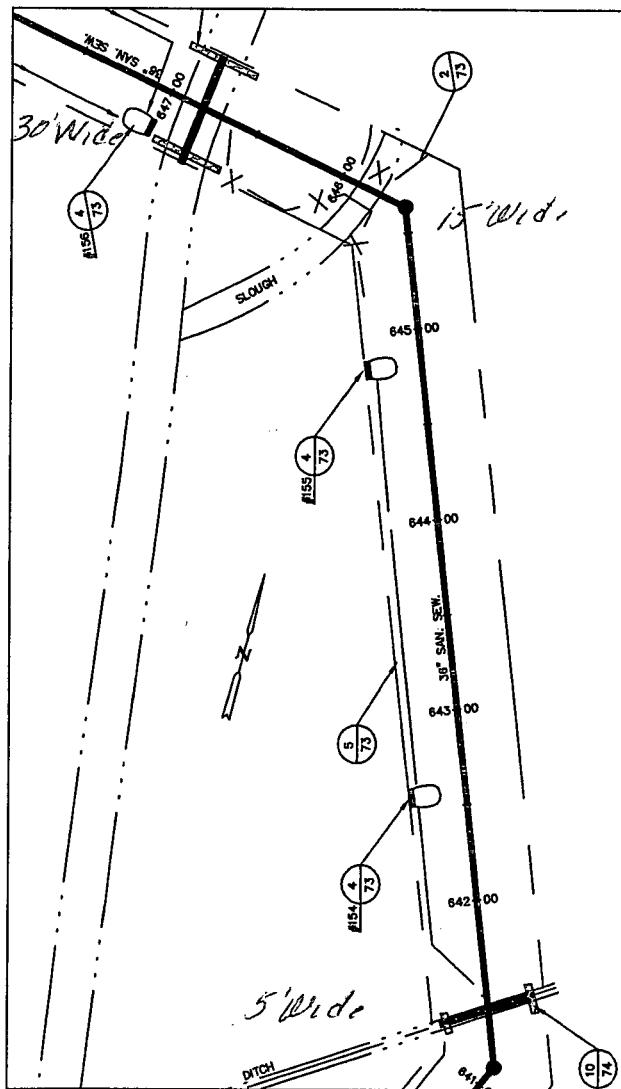
Site 45-Ia - Ditch

Temporary Impact = 0.007 Ac = 48 LF

E 2,060,948

N 647,187

SITE #45-I



Site 45 c - Creek

Temporary Impact = 0.033 Ac = 48 LF

E 2,061,144

N 646,832

Site 45 b -Forested Wetlands

Temporary Impact = 0.014 Ac

Permanent Impact = 0.004 Ac

E 2,061,239

N 646,813

Site 45 a - Branch

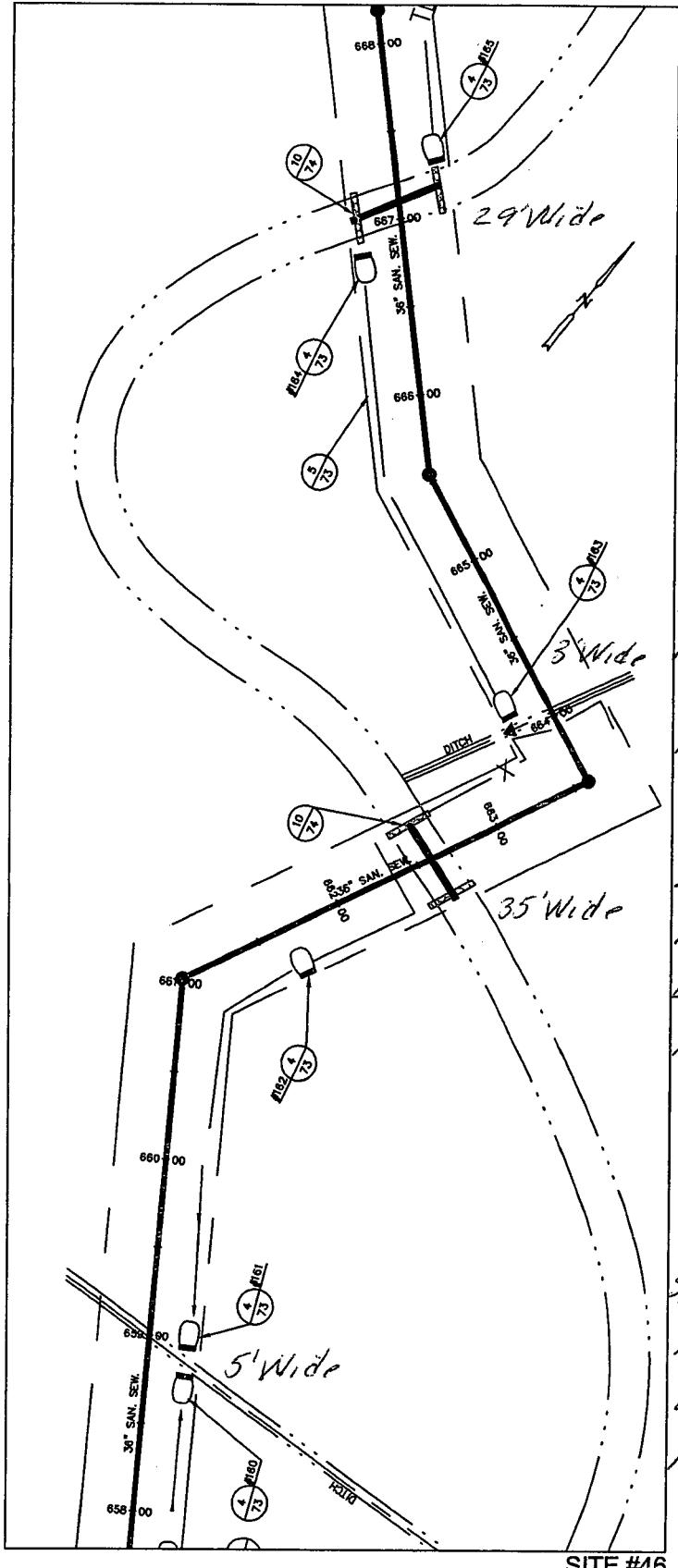
Temporary Impact = 0.006 Ac = 48 LF

E 2,061,413

N 646,916

SITE #45

MAP #29
SCALE: 1"=100'



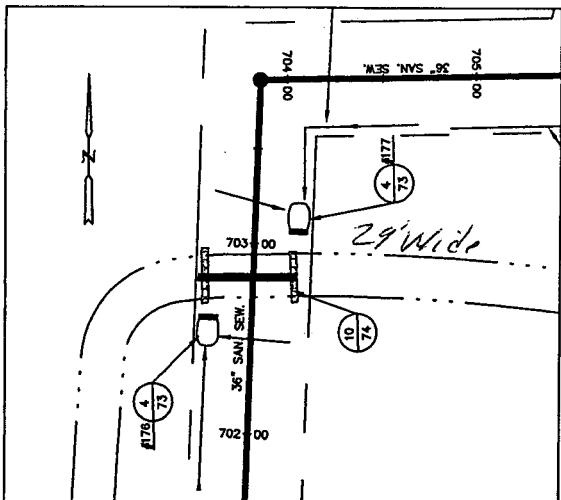
Site 46 d Creek
 Temporary Impact = 0.032Ac = 48LF
 E 2,060,463
 N 648,468

Site 46 c - Branch
 Temporary Impact = 0.003Ac = 90LF.
 E 2,060,718
 N 648,303

Site 46 b - Creek
 Temporary Impact = 0.039Ac = 48LF.
 E 2,060,713
 N 648,200

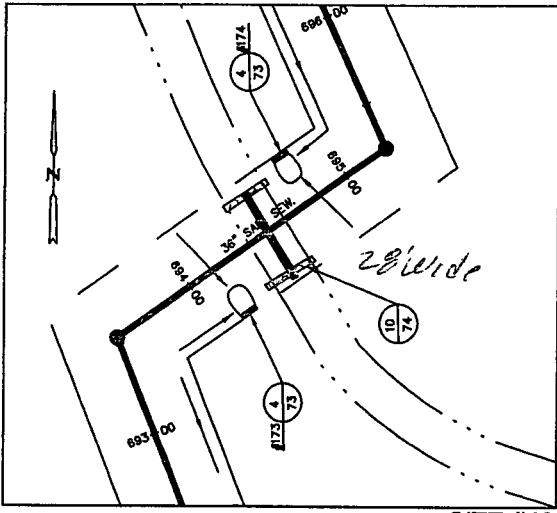
Site 46 a - Ditch
 Temporary Impact = 0.006Ac = 55LF
 E 2,060,769
 N 647,888

MAP #29A
 SCALE: 1"=100'



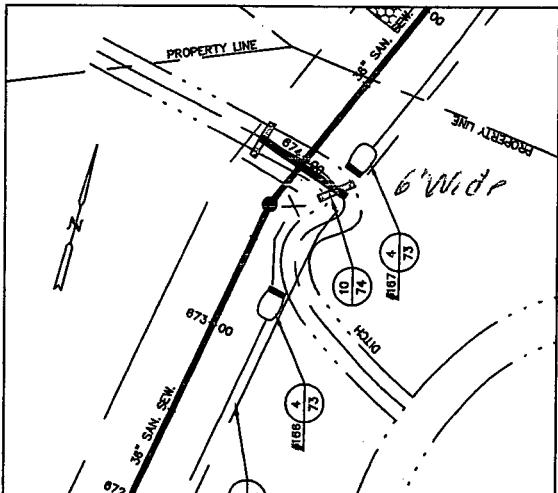
SITE #49

Creek
Temporary Impact 0.032 Ac = 38 LF
E 2,069,077
N 651,753



SITE #48

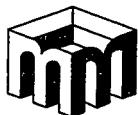
Creek
Temporary Impact = 0.031 Ac = 38 LF
E 2,069,177
N 650,991

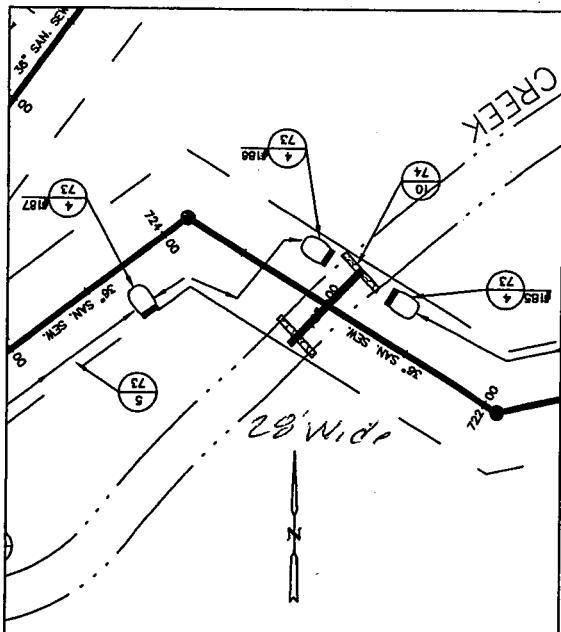


SITE #47

Branch
Temporary Impact = 0.005 Ac = 38 LF
E 2,069,355
N 649,099

MAP #30
SCALE: 1"=100'





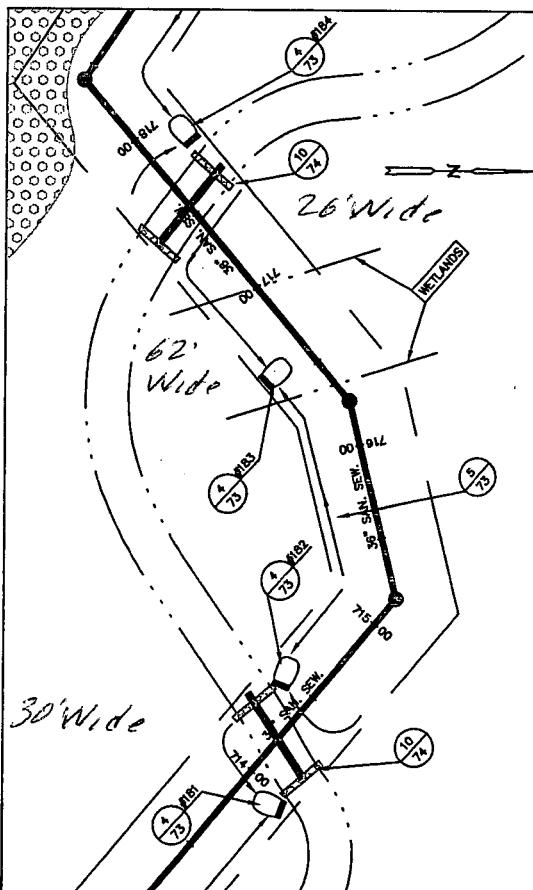
SITE #51

Greek

$$\text{Temporary Impact} = 0.031 A_c = 48 \text{ L.F.}$$

E 2,059,154

N 652,600



SITE #50

Site 50 c-Creek

$$\text{Temporary Impact} = 0.029 A_L = 48 \text{ L.F.}$$

E 2,059,615

N 652, 503

Site 50 b - Forested Wetlands

Temporary Impact = 0.0721

Permanent Impact - 0.018 AC

E 2,059,691

N 652,567

51450 a-Creek

$$\text{Temporary Import} = 0.033 A_L = 48 \text{ L.F.}$$

E 2,059,889

N 652,550

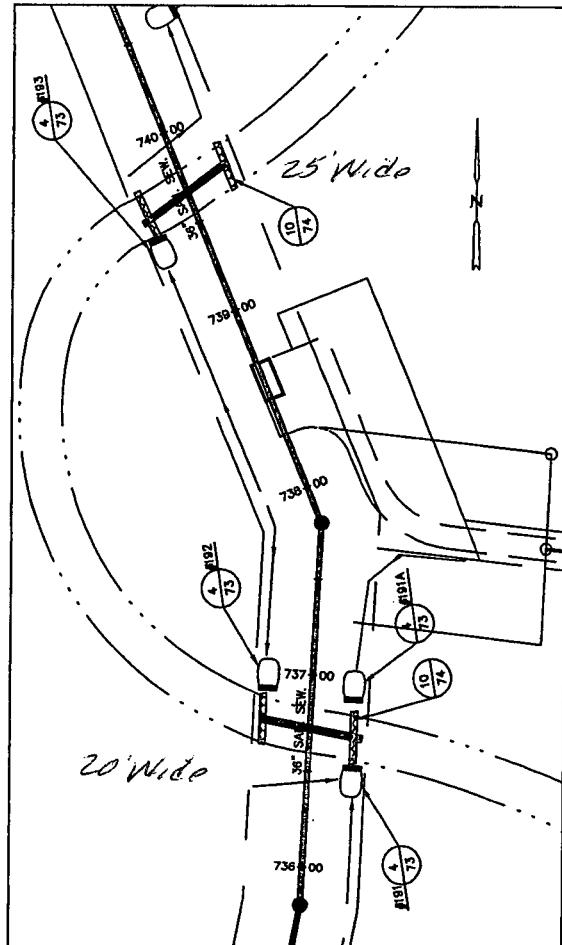
MAP #31
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM

36" SEWERLINE



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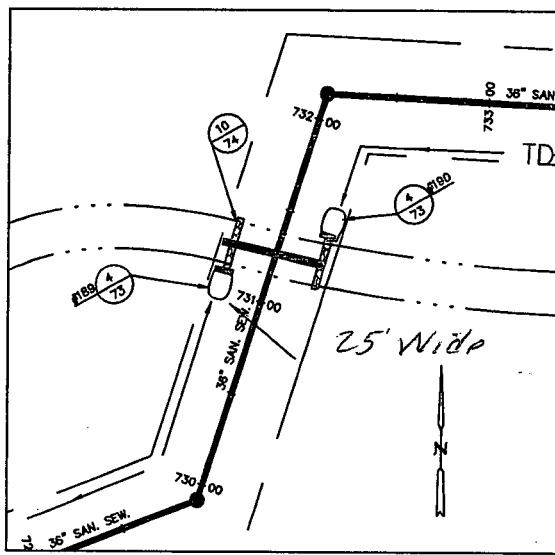
SITE #53

Site 53 b-Creek

Temporary Impact - 0.028 Acre = 98 L.F.
E 2,059,417
N 653,655

Site 53 a - Creek

Temporary Impact - 0.022 A_c = 48LF
E 2,059,485
N 653 369



SITE #52

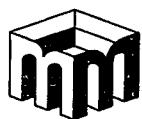
Creek

Temporary Impact = 0.028 AIC = 48 L.F.
E 2,059,243
W 653,013

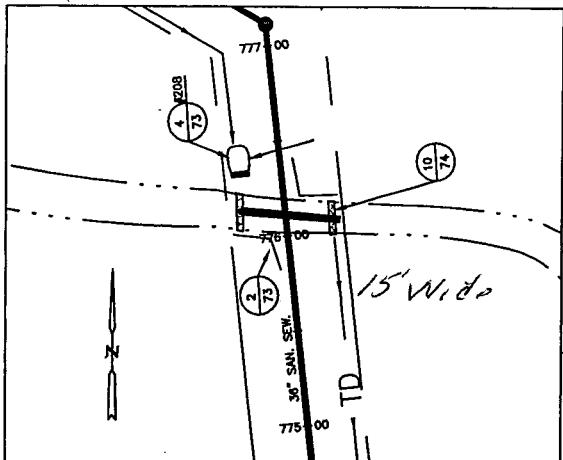
MAP #32
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM

36" SEWERLINE

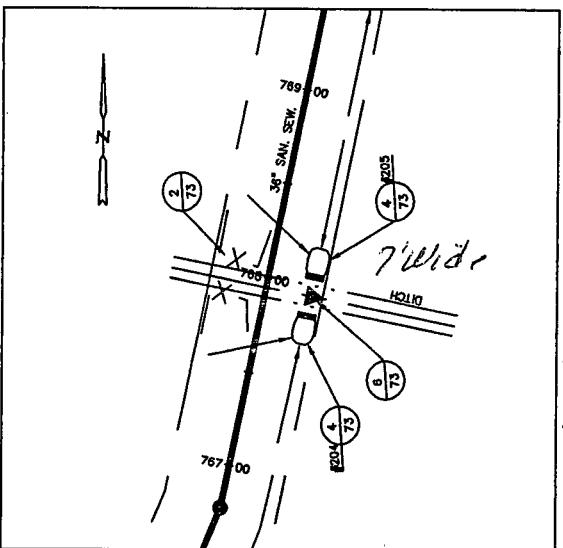


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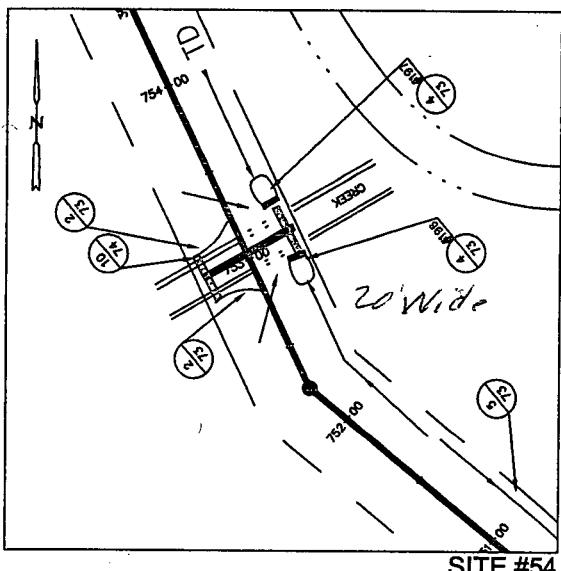
Creek
Temporary Impact = 0.017 Ac = 78 LF
E 2,059,574
N 656,633

SITE #55



Ditch
Temporary Impact = 0.008 Ac = 48 LF
E 2,059,516
N 655,826

SITE #54-1

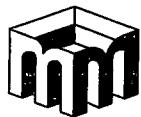


Branch
Temporary Impact = 0.022 Ac = 98 LF
E 2,059,029
N 654,745

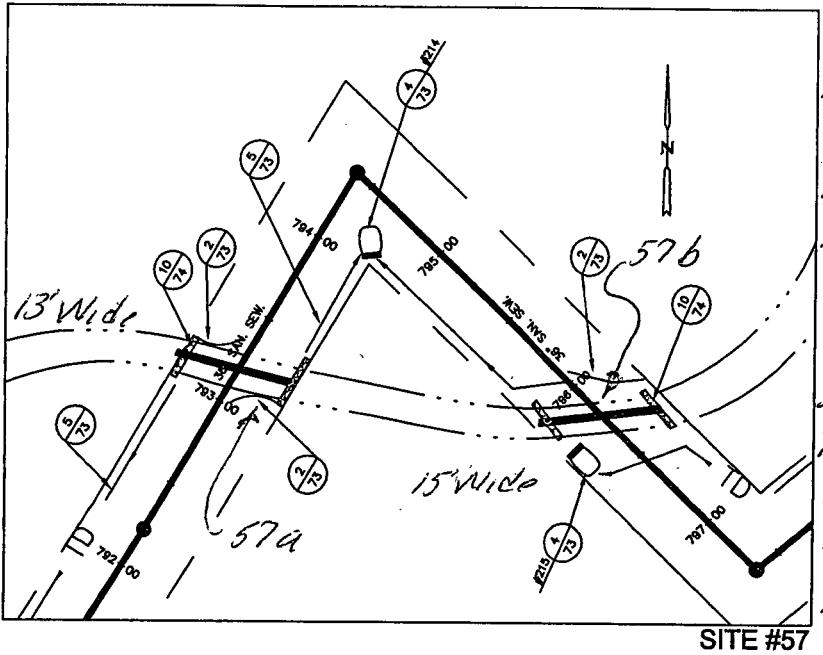
SITE #54

MAP #33
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
36" SEWERLINE

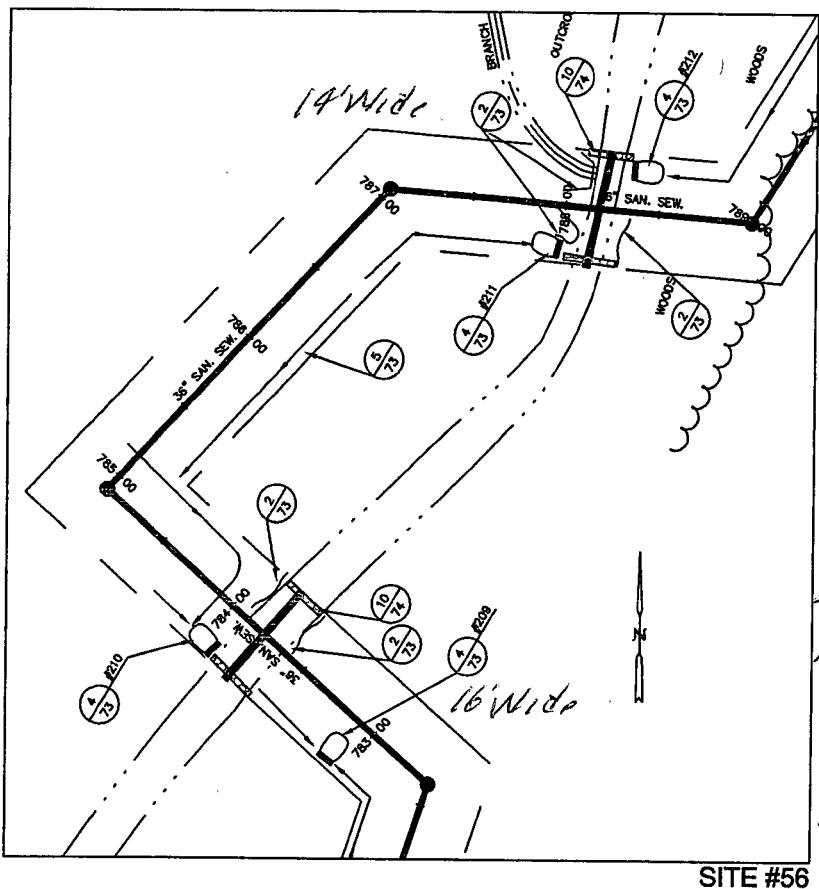


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Site 57 b - Creek
Temporary Impact =
0.013 Ac = 38LF
E 2,059,993
N 659,761

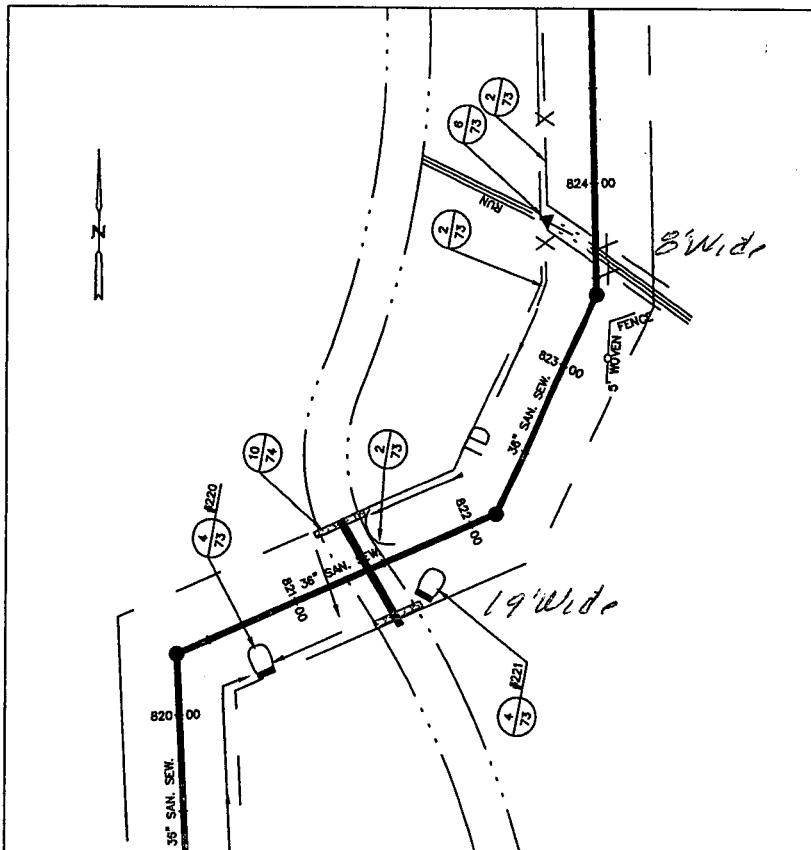
Site 57a - Creek
Temporary Impact -
0.011 Ac = 38LF.
E 2,059,801
N 659,782



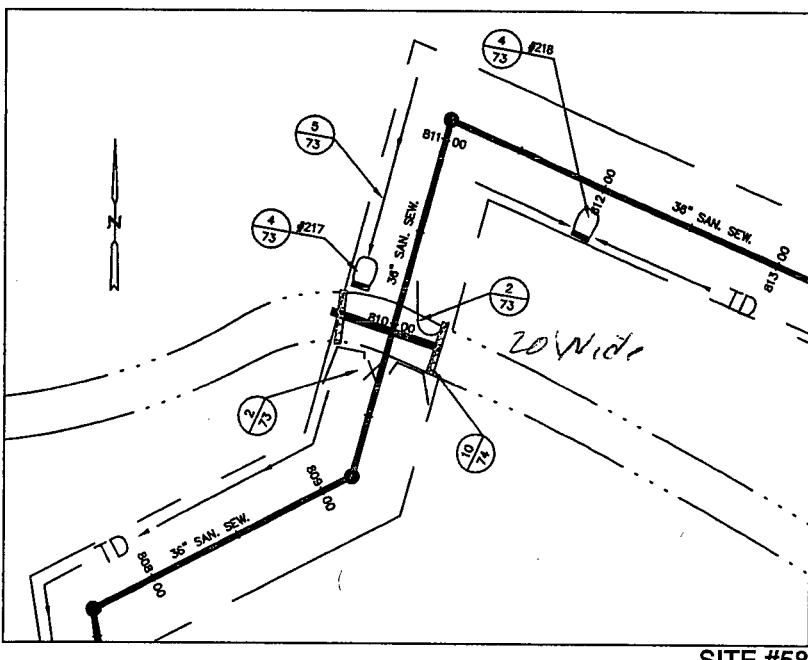
Site 56 b - Creek
Temporary Impact =
0.012 Ac = 38LF
E 2,059,499
N 659,437

Site 56 a - Creek
Temporary Impact =
0.014 Ac = 38LF
E 2,059,329
N 659,208

MAP #34
SCALE: 1"=100'



SITE #59



SITE #58

Site 596 - Branch
Temporary Impact =
0.007AE = 38LF.
E 3,061,192
N 659,219

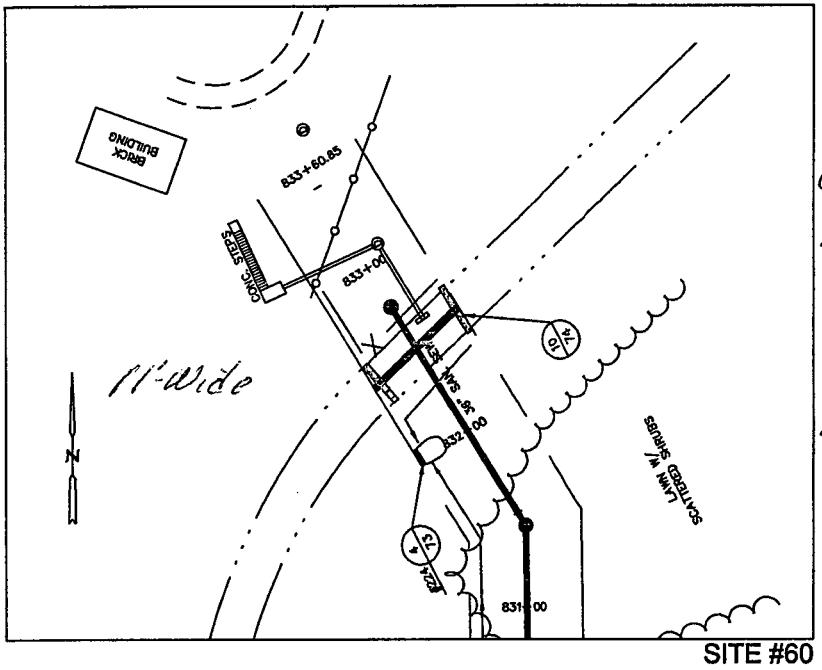
Site 59a - Creek
Temporary Impact =
 $0.017 \text{ Ac} = 38 \text{ LF}$
E 2,061,074
N 659,055

MAP #35
SCALE: 1"=100'

**HARNETT/WAKE SANITARY SEWER SYSTEM
36" SEWERLINE**

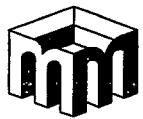


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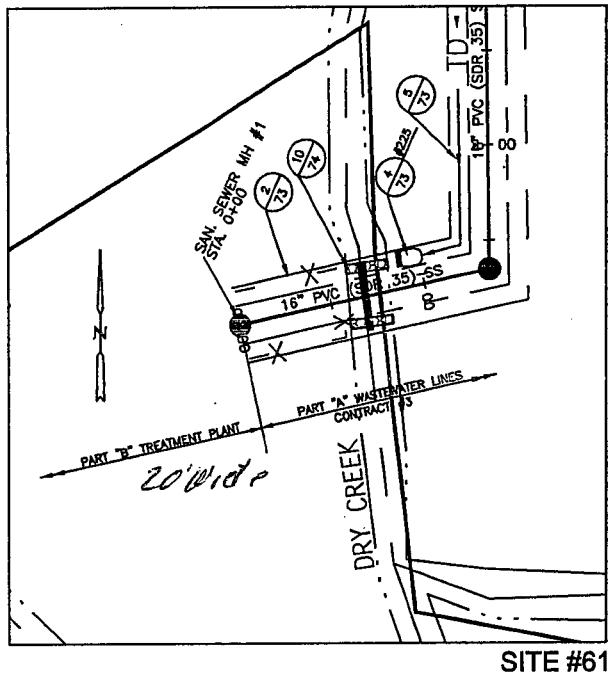


MAP #36
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
36" SEWERLINE



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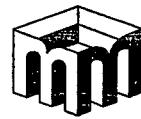
Creek

Temporary Impact = 0.018 AC = 40LF.

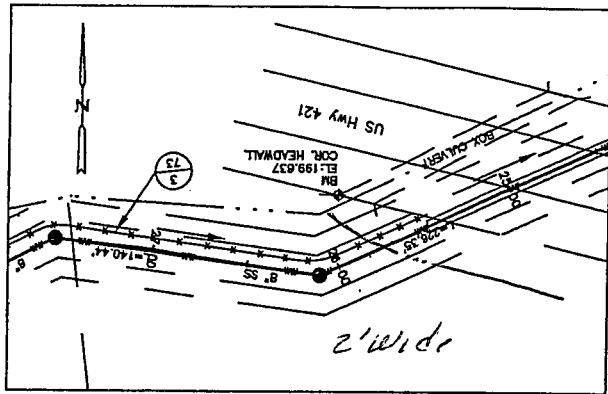
E 2,059,718
N 602,078

MAP #37
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
16" SEWERLINE

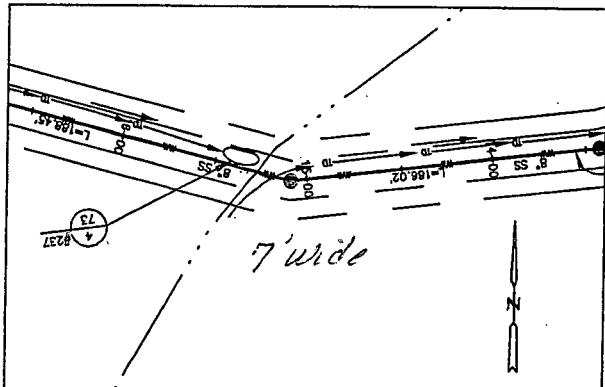


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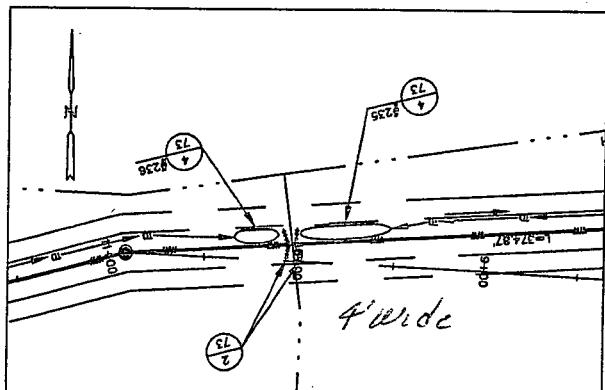
O,tch
Temporary Impact: 0.002 Ac = 50 LF
E 2,049,132
N 601,836

SITE #64



Branch
Temporary Impact = 0.006 Ac
= 90 LF.
E 2,050,126
N 601,933

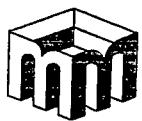
SITE #63

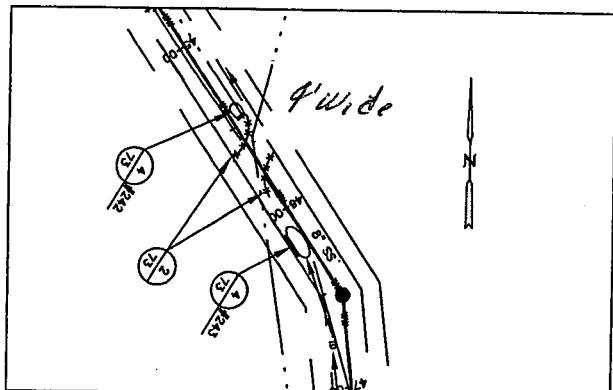


Branch
Temporary Impact = 0.004 Ac
= 80 LF.
E 2,050,696
N 602,002

SITE #62

MAP #38
SCALE: 1"=100'



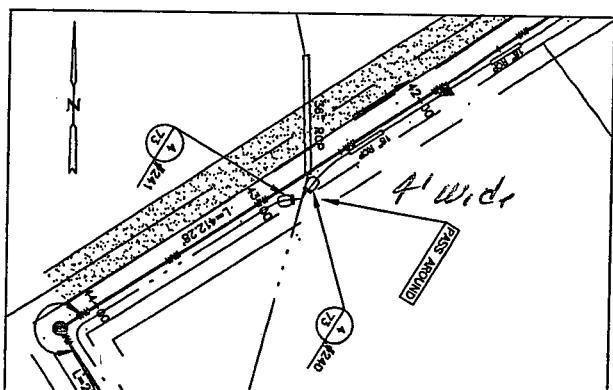


SITE #66

Branch
Temporary Impact = 0.0074 Ac
= 81 L.F.

E 2,048,267

N 600,733



SITE #65

Branch
Temporary Impact = 0.003 Ac
= 28 L.F.

E 2,048,313

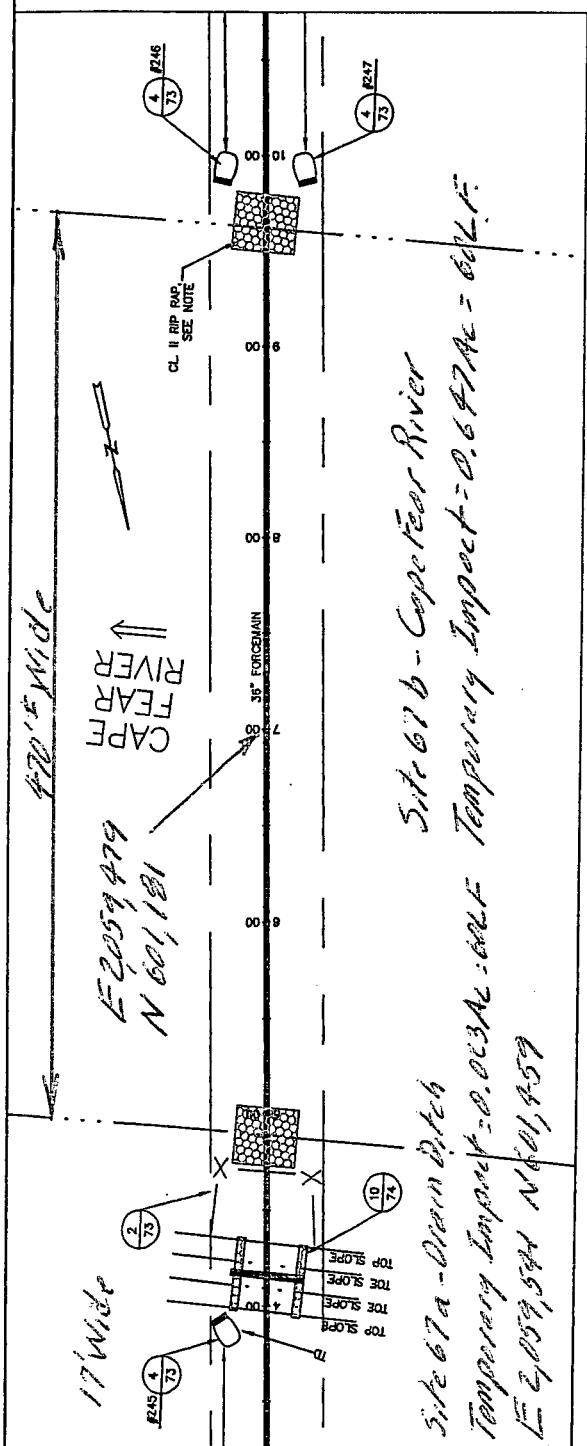
N 600,937

MAP #39
SCALE: 1"=100'

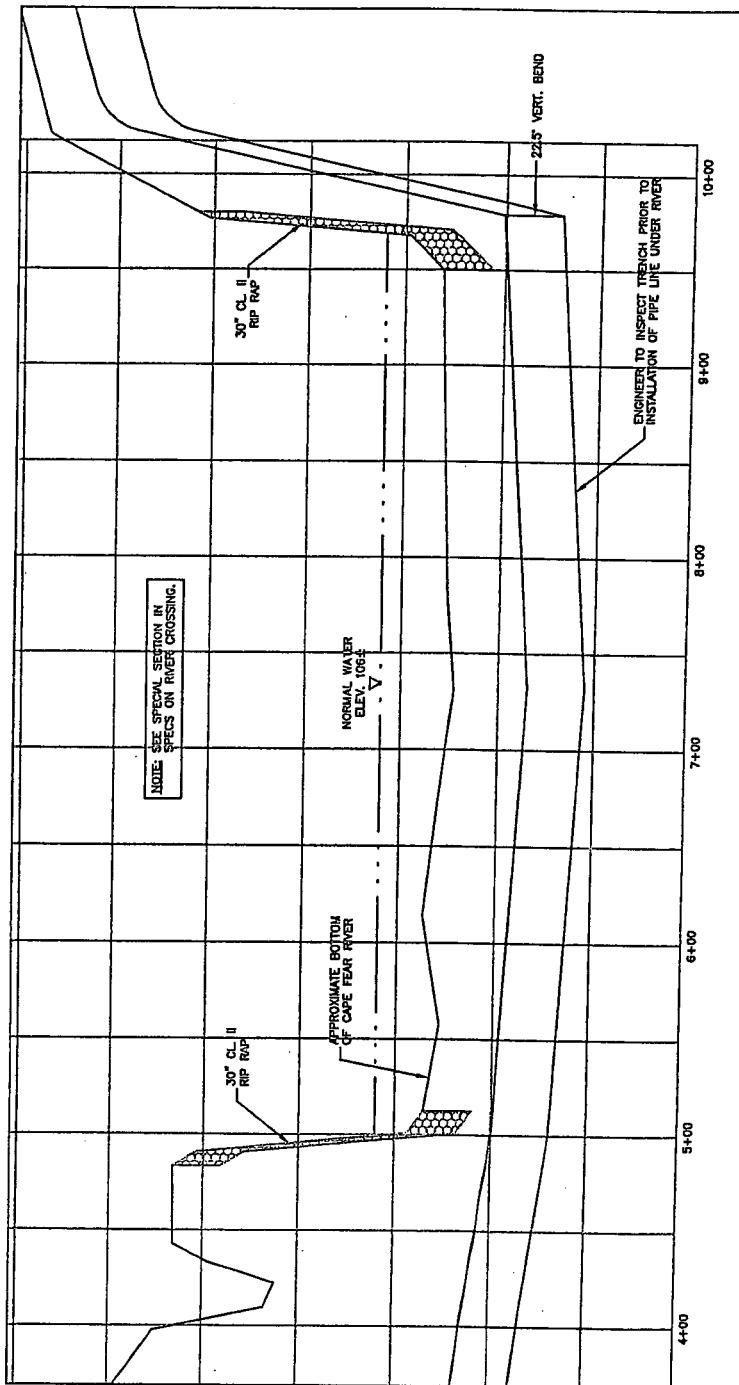
HARNETT/WAKE SANITARY SEWER SYSTEM
8" SEWERLINE



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ASHEBORO, NORTH CAROLINA



SITE #67

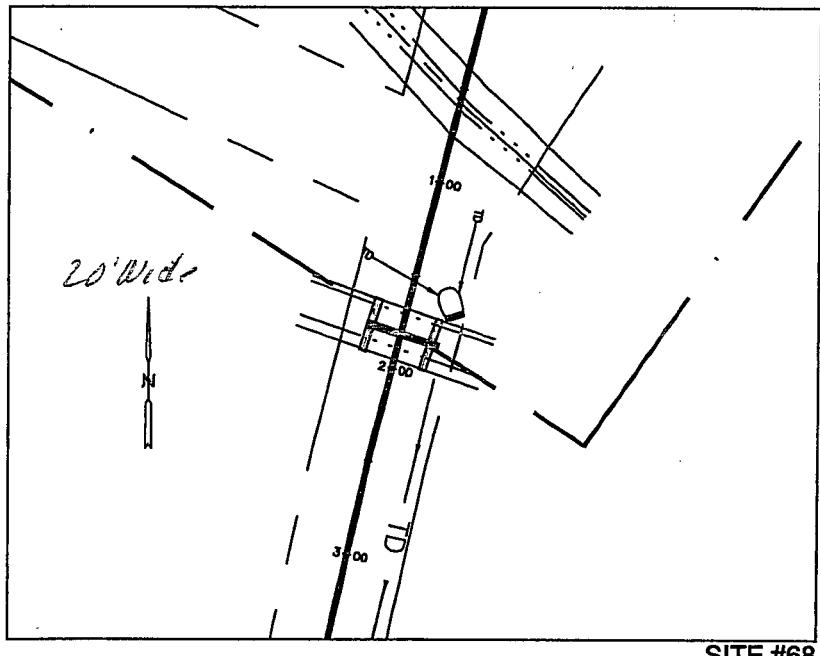


MAP #40
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
36" FORCEMAIN



MARZIANO & MINIER, P.A.
CONSULTING ENGINEERS
ASHEBORO, NORTH CAROLINA

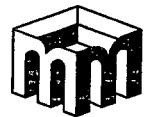


SITE #68

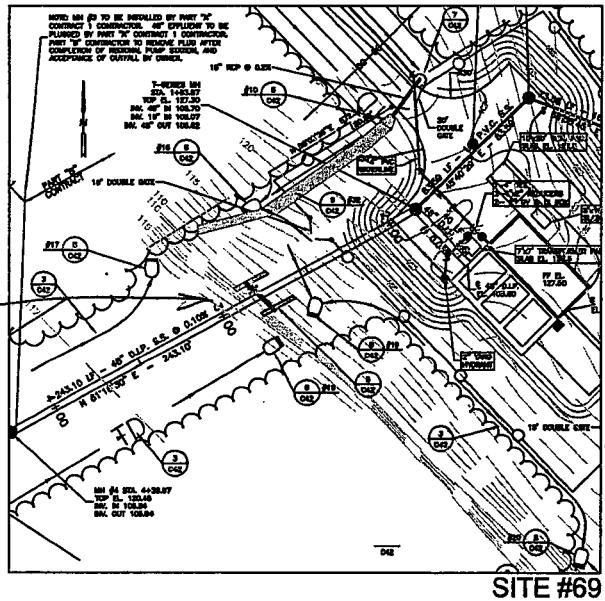
Drain Ditch
Temporary Impact = 0.030 Ac = 60LF.
E 2,059,594
N 601,688

MAP #41
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
36" FORCEMAIN



MARZIANO & MINIER, P.A.
CONSULTING ENGINEERS
ASHEBORO, NORTH CAROLINA

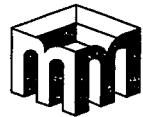


Ditch
Temporary Impact =
0.006 Ac = 30 L.F.
E 2,059,429
N 601,987

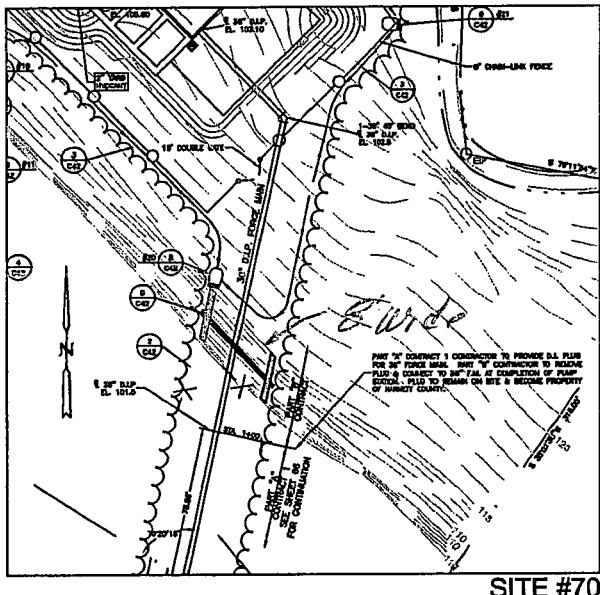
MAP #42
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM

48" SEWERLINE



MARZIANO & MINIER, P.A.
CONSULTING ENGINEERS
ASHEBORO, NORTH CAROLINA



SITE #70

Drain Ditch

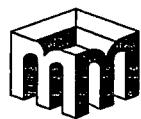
Temporary Impact = 0.011 Ac = 60 L.F.

E 2,059,625

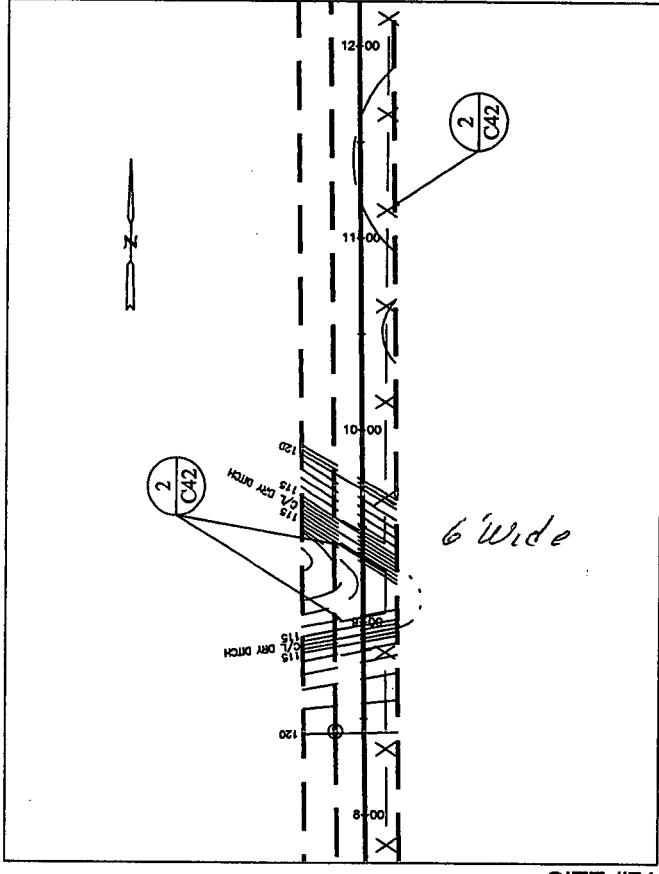
N 601,814

MAP #43
SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
36" FORCEMAIN



MARZIANO & MINIER, P.A.
CONSULTING ENGINEERS
ASHEBORO, NORTH CAROLINA

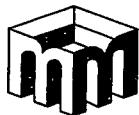


SITE #71

Branch
 $\text{Temporary Impact} = 0.010 A_c = 75 \text{ L.F.}$
 E2,059,618
 N 600,454

MAP #44
 SCALE: 1"=100'

HARNETT/WAKE SANITARY SEWER SYSTEM
 48" SEWERLINE

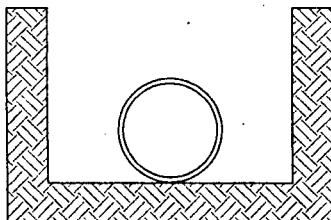


MARZIANO & MINIER, P.A.
 CONSULTING ENGINEERS
 ASHEBORO, NORTH CAROLINA

LAYING
CONDITIONS

DESCRIPTION

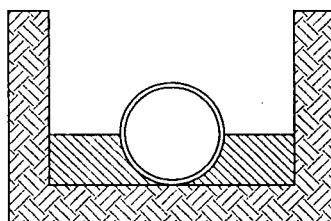
PROJECT USE



TYPE 1

FLAT BOTTOM UNDISTURBED
EARTH TRENCH, LOOSE BACKFILL

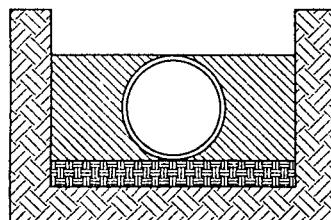
NOT USED.



TYPE 2

FLAT BOTTOMED UNDISTURBED EARTH
TRENCH. BACKFILL LIGHTLY
CONSOLIDATED TO CENTERLINE
OF PIPE.

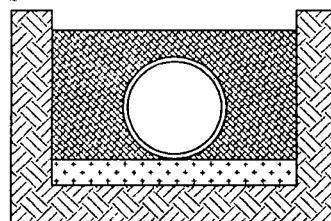
NOT USED.



TYPE 3

PIPE BEDDED IN 4" MINIMUM
JOB EXCAVATED MATERIAL.
BACKFILL LIGHTLY CONSOLIDATED
TO TOP OF PIPE.

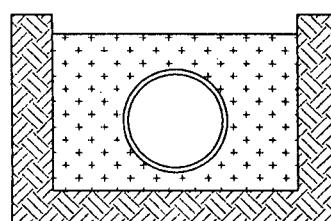
ALL DUCTILE
IRON GRAVITY
SEWER LINE.



TYPE 4

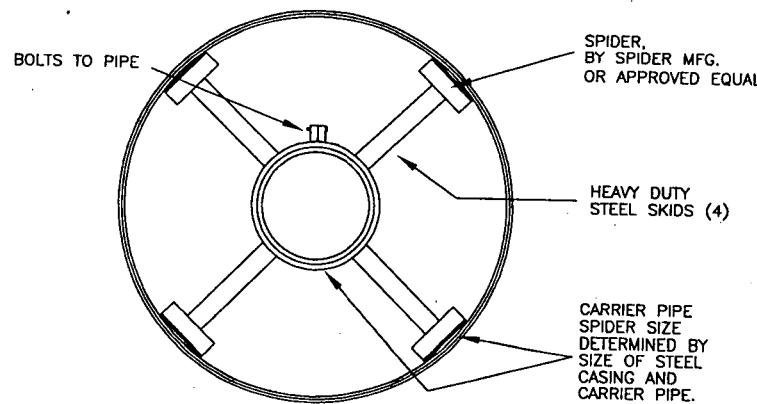
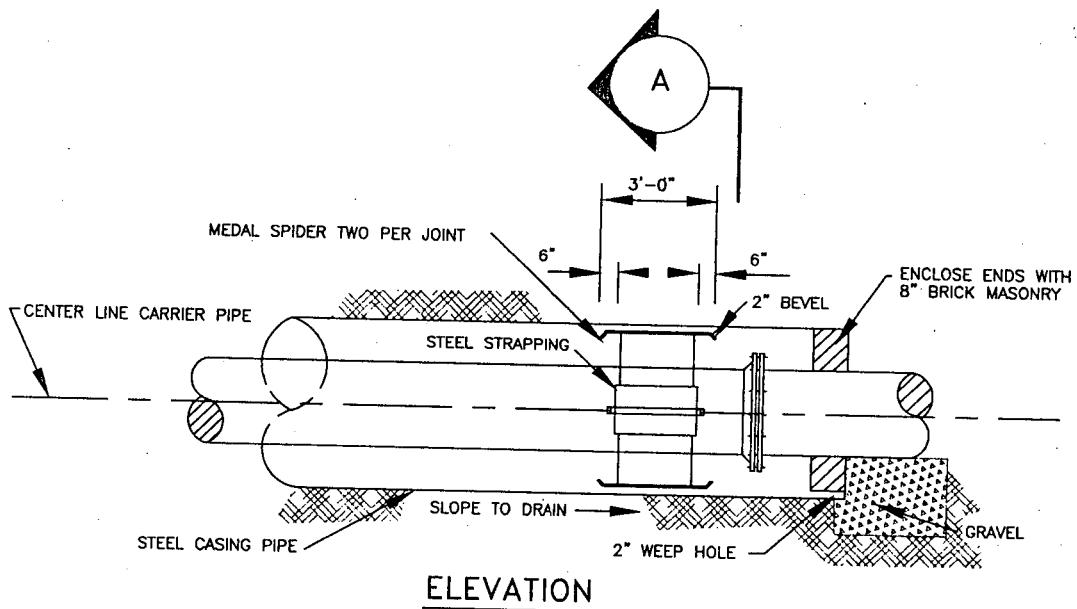
PIPE BEDDED IN SAND, GRANULAR
MATERIAL OR GRADED GRAVEL TO
THE DEPTH OF 1/8 PIPE DIAMETER,
4" MIN. JOB EXCAVATED MATERIAL
COMPACTED TO 4" ABOVE TOP OF PIPE.
(APPROX. 95% STANDARD PROCTOR,
AASHTO T-99)

NOT USED.

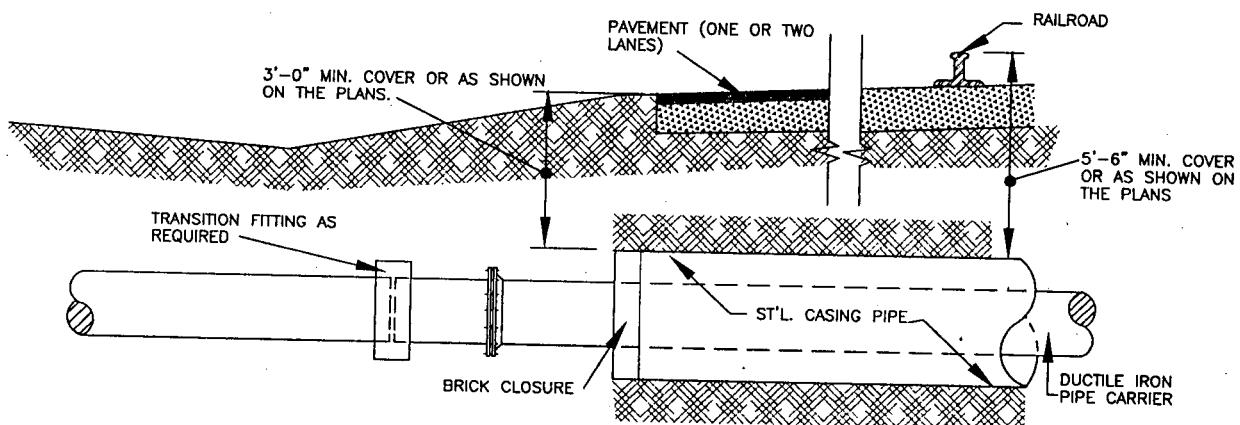


PIPE BEDDED TO ITS CENTERLINE
IN COMPACTED GRANULAR MATERIAL
4" MIN. UNDER PIPE. COMPACTED
GRANULAR OR SAND MATERIAL TO
4" ABOVE TOP OF PIPE.
(APPROX. 95% STANDARD PROCTOR,
AASHTO T-99)

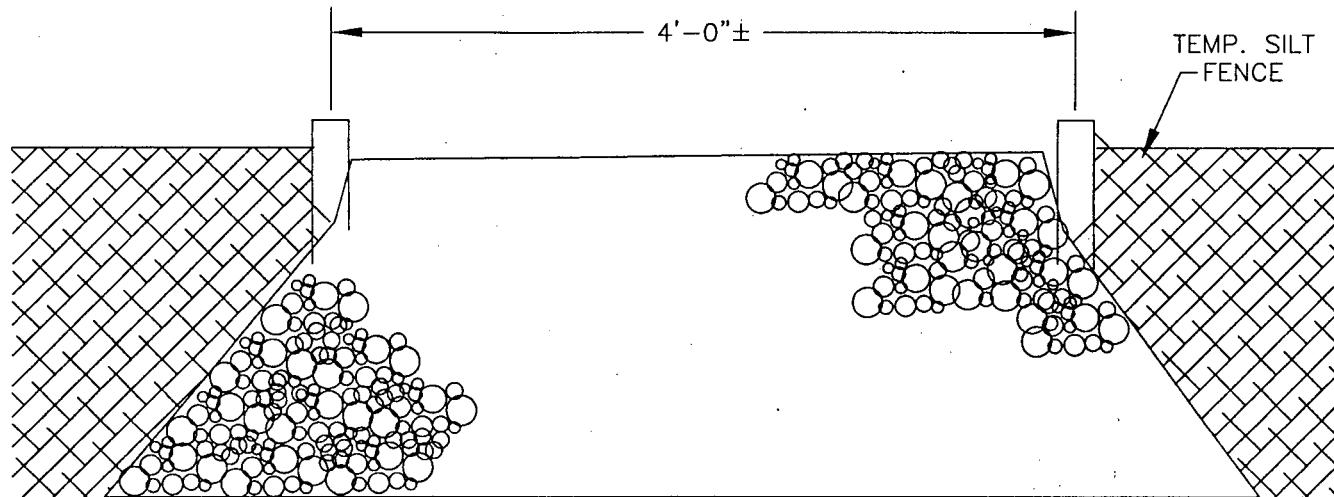
ALL PVC GRAVITY
SEWER LINE.



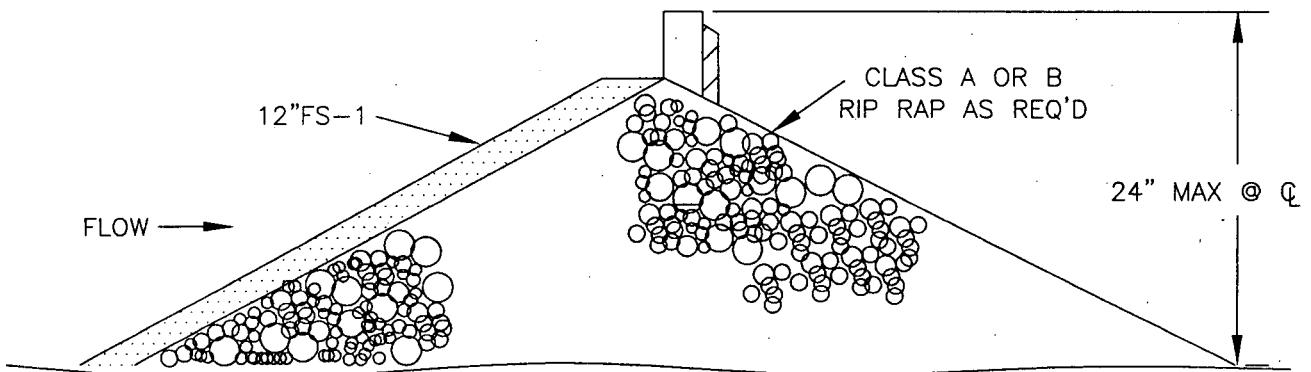
SECTION "A"



PROFILE



FRONT ELEVATION

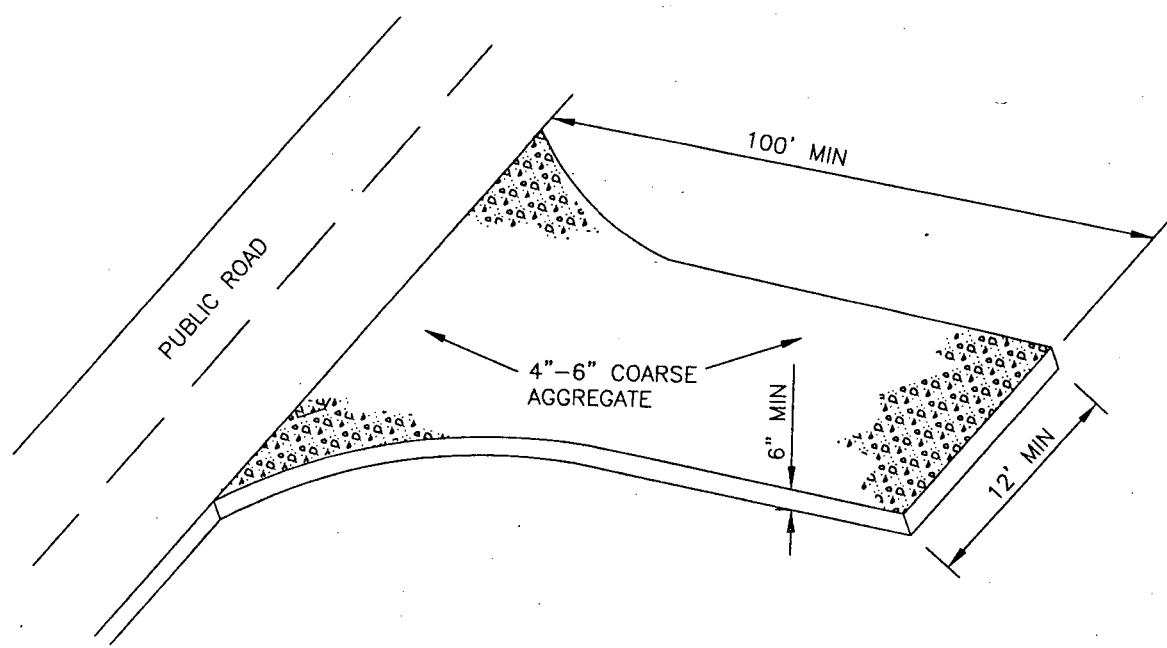


SECTION

ROCK CHECK DAM @ SILT FENCE OUTLET

NO SCALE

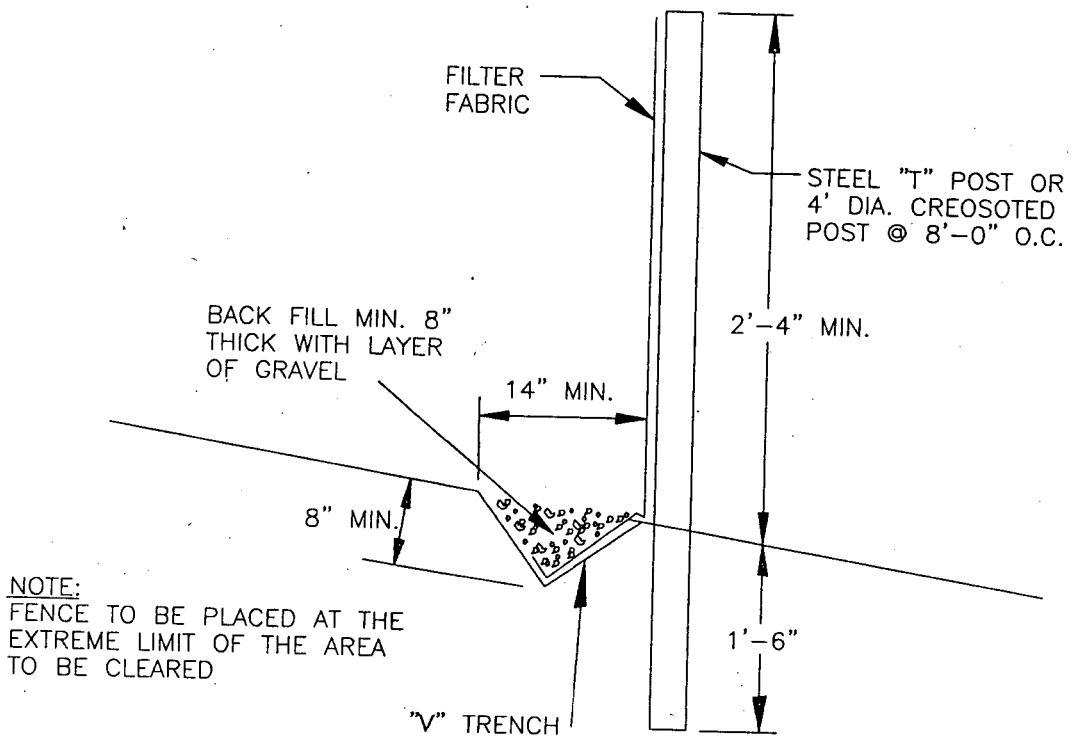
3
-



TEMPORARY CONSTRUCTION ENTRANCE

NO SCALE

1



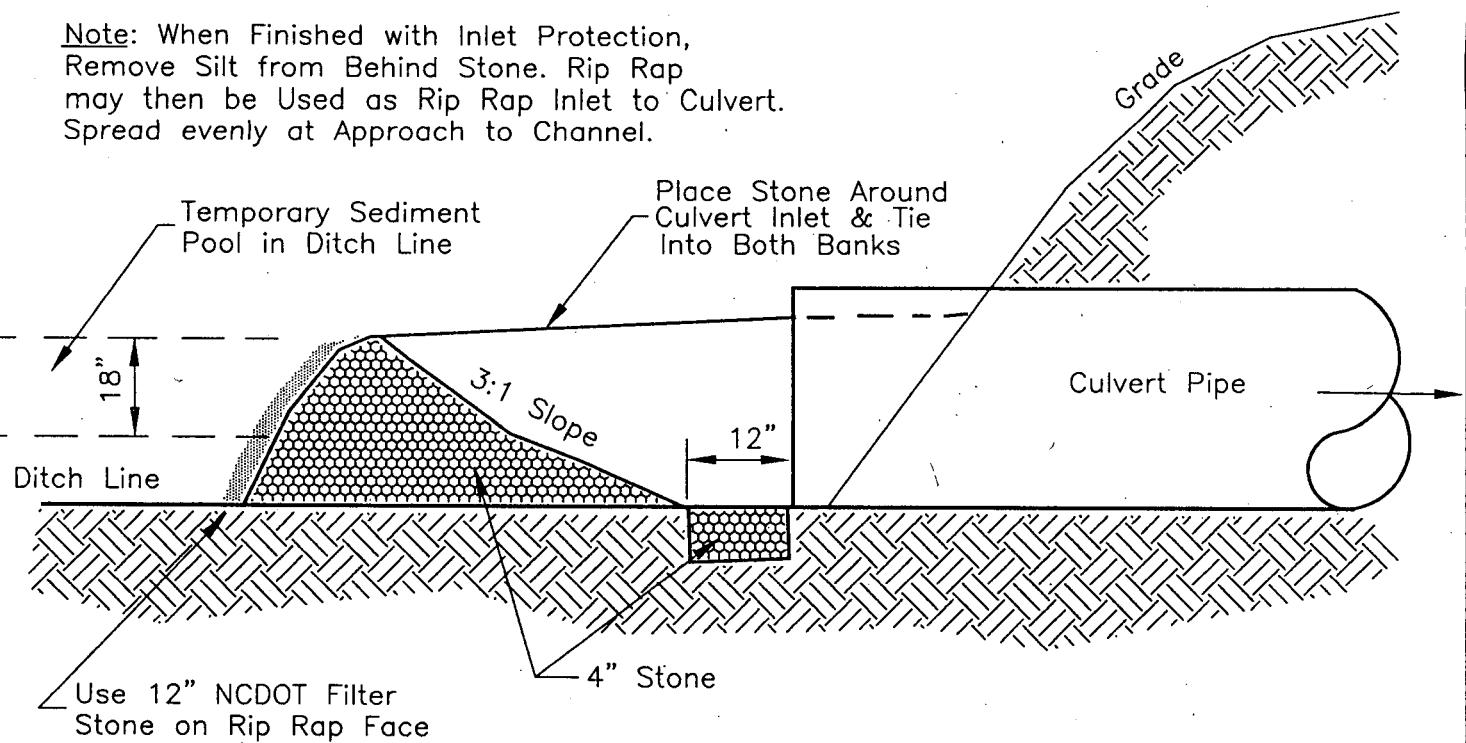
ELEVATION - DETAIL

TEMPORARY SILT FENCE

NO SCALE

2

Note: When Finished with Inlet Protection, Remove Silt from Behind Stone. Rip Rap may then be Used as Rip Rap Inlet to Culvert. Spread evenly at Approach to Channel.

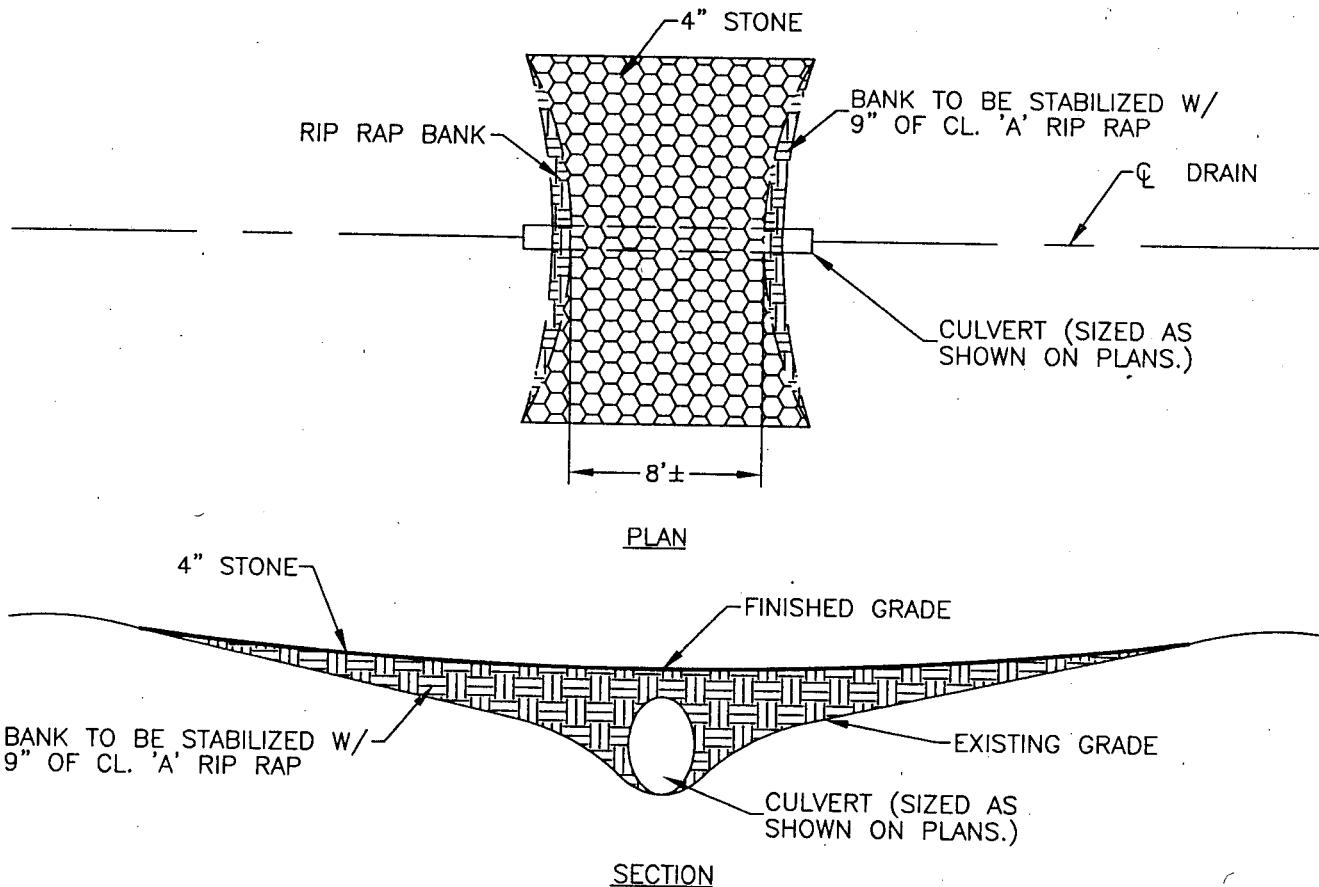


SECTION - DETAIL

CULVERT INLET PROTECTION

8

NO SCALE



PERMANENT DITCH CROSSING

NO SCALE

12

THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO AVOID THE SILTING OF STREAMS, LAKES OR OTHER WATER COURSES DUE TO THE CONSTRUCTION OF THIS PROJECT.

EFFECTIVE EROSION CONTROL MEASURES SHALL BE INITIATED PRIOR TO THE COMMENCEMENT OF CLEARING, GRADING, EXCAVATION, OR OTHER OPERATIONS THAT WILL DISTURB THE NATURAL PROTECTION. THE EROSION CONTROL DETAILS SHOWN HEREIN ARE FOR THE CONTRACTOR'S REFERENCE. THE DETERMINATION OF WHICH DETAIL IS APPLICABLE AS THE WORK PROGRESSES SHALL BE AS SHOWN ON THE PLANS OR MADE BY THE ENGINEER.

ALL DITCHES SHALL BE STABILIZED AS SOON AS IS PRACTICABLE TO MINIMIZE EROSION.

THE CONTRACTOR IS REFERRED TO THE DETAILED SPECIFICATIONS FOR A DESCRIPTION OF ADDITIONAL EROSION CONTROL REQUIREMENTS.

THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES IN A GOOD, WORKING STATE OF REPAIR UNTIL THEIR USE IS NO LONGER WARRANTED. AT THAT TIME, THE EROSION CONTROL DEVICES SHALL BE REMOVED AND DISPOSED OF SO AS TO CAUSE NO STREAM SILTATION.

WHERE CULVERT PIPES ARE TO BE INSTALLED UNDER ROADWAYS, THE CONTRACTOR SHALL INSTALL THE CULVERTS AS RAPIDLY AS IS PRACTICAL, BACK FILL IMMEDIATELY AND RIP RAP THE UPSTREAM AND DOWNSTREAM SIDES OF THE STREAM CHANNEL.

1. VERIFY OWNER HAS OBTAINED A COPY OF THE EROSION CONTROL PERMIT.
2. STAKE OUT HORIZONTAL ALIGNMENT OF WASTEWATER LINES & WATER LINES.
3. CLEAR EASEMENT OR RIGHT-OF-WAY AS REQUIRED TO INSTALL PIPELINE OR CONSTRUCTION ACCESS ROADS.
4. BEFORE GRUBBING THE RIGHT-OF-WAY, INSTALL TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCE, TEMPORARY BERM DIVERSION DITCHES & SEDIMENT TRAPS WHERE SHOWN ON THE PLANS. NOTE: ADDITIONAL MEASURES MAY BE REQUIRED BASED UPON THE CONTRACTOR'S CONSTRUCTION PROGRESS.
5. GRUB THE EASEMENT FOR THE WASTEWATER LINE INSTALLATION & RESTAKE THE HORIZONTAL & VERTICAL ALIGNMENT OF THE SEWER LINES & MANHOLES.
6. EXCAVATE TRENCH AND INSTALL WASTEWATER LINES & MANHOLES IN ACCORDANCE WITH DESIGN PLANS. BACKFILL & TAMP THE TRENCH MATERIAL IMMEDIATELY BEHIND THE PIPE INSTALLATION. ALL TRENCHING SHOULD BE BACKFILLED AT THE END OF EACH WORKING DAY. INSTALL PERMANENT STREAM CROSSING WHERE REQUIRED.
7. IN AREAS WHERE THE PIPELINE IS TO CROSS A STREAM OR DRAINAGE DITCH, STREAM PROTECTION SHALL BE INSTALLED AS SHOWN IN THE DETAILS OF THE PLANS.
8. PERMANENT SEEDING AND MULCHING SHOULD BE INSTALLED IN DISTURBED AREAS WITHIN 15 DAYS OF THE PIPELINE INSTALLATION. FAILURE TO DO THIS MAY NECESSITATE SHUT DOWN OF PIPE INSTALLATION UNTIL PERMANENT SEEDING IS COMPLETED.
9. AFTER GRASS GERMINATES, REPAIR AND/OR RESEED AREAS WHERE NO GRASS IS ESTABLISHED.
10. MAINTAIN ALL EROSION CONTROL MEASURES UNTIL ALL GRASSED AREAS HAVE BEEN ESTABLISHED.

CONSTRUCTION SEQUENCE

Seeding mixture	
Species	Rate (lb/acre)
Rye (grain)	120
annual lespedeza kobe in Piedmont & Coastal Plain, Korean in Mountains.	50

Seeding dates

Mountains (above 2,500 ft): Feb. 15 – May 15

(below 2,500 ft.) Feb. 1 – May 1

Piedmont: Jan. 1 – May 1

Coastal Plain: Dec. 1 – Apr. 15

Soil Amendments

Apply lime and fertilizer according to tests, or apply 2,000 lb/acre ground agriculture limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch

Apply 4,000 lb/acre grain straw, or equivalent cover of another suitable mulching material. Anchor mulch by tacking with asphalt, roving, or netting. Netting is the preferred anchoring method on steep slopes.

Maintenance

Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage

NOTE: THIS TEMPORARY GRASSING SPECIFICATION IS TO BE USED DURING THE DATES SHOWN ABOVE. PERMANENT GRASSING SHALL BE COMPLETED AS SHOWN FOR PROJECT GRASSING SPECIFICATIONS.

TEMPORARY GRASSING SPECIFICATION

Seeding mixture Species	Rate (lb/acre)
Kentucky 31 Fescue	75
Pensacola Bahigrass	50
Centipede	5
10-10-20 fertilizer	500
Limestone	4000

Seeding notes

1. In Eastern Piedmont add 25lb/acre Pensacola Bahiagrass or 10 lb/acre common Bermuda grass. Use common Bermuda grass only where it is unlikely to become a pest.
2. After Aug. 15 use unscarified sericea seed.
3. Where a neat appearance is desired, omit sericea and substitute 40 lb/acre Bahiagrass or 15lb/acre Bermuda grass.
4. To extend spring seeding dates into June, add 15 lb/acre hulled Bermudagrass. However, it is preferable to seed temporary cover and seed fescue in Sept.

Nurse plants

Between May 1 and Aug. 15, add 10lb/acre German millet or 15lb/acre Sudangrass. Prior to May 1 or after Aug. 15, add 40 lb/acre rye (grain).

Seeding dates

	Best	Possible
Fall:	Aug. 25-Sept 15	Aug. 20-Oct. 25
Late winter:	Feb. 15-Mar.21	Feb. 1-Apr. 15

Fall is best for tall fescue and late winter for lespedezas. Overseeding of Kobe lespedeza over fall-seeded tall fescue is very effective. Use unhulled Bermuda grass seed in Fall.

Soil Amendments

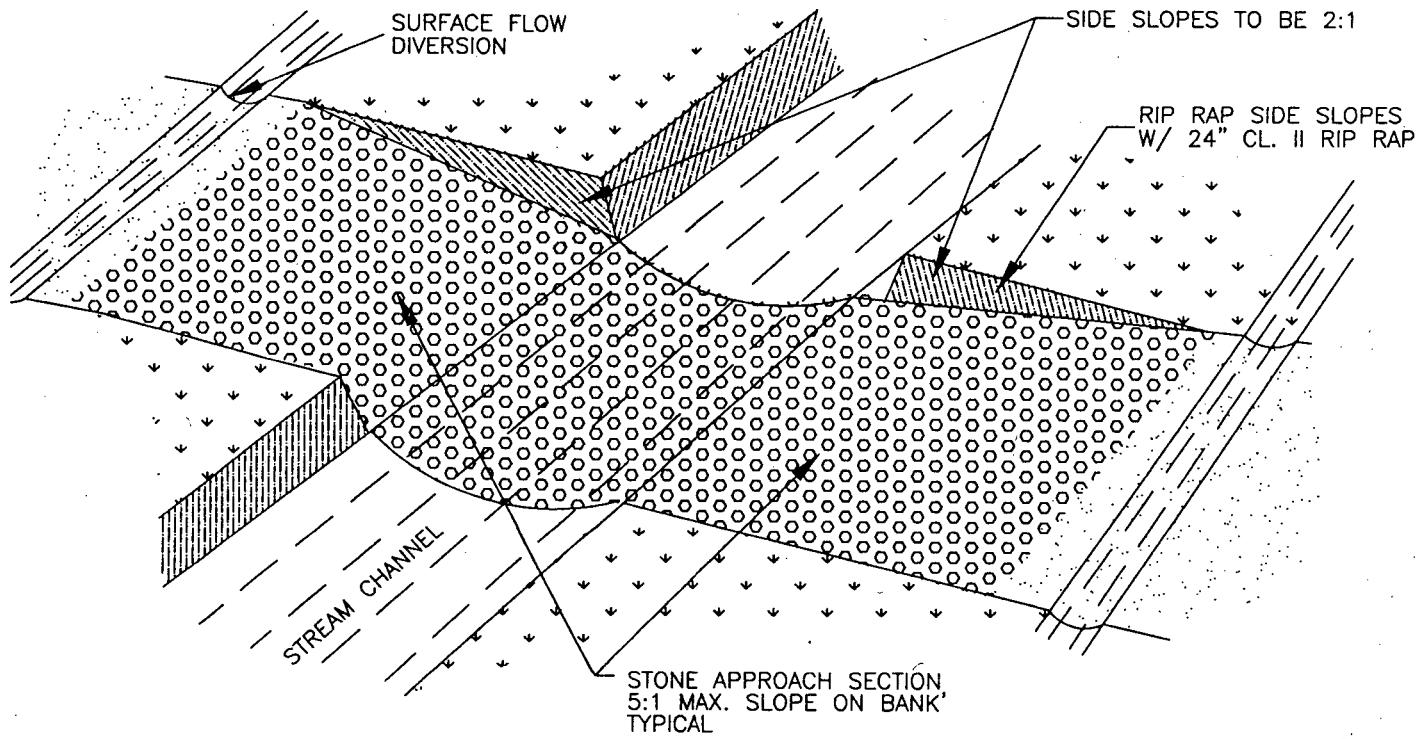
Apply lime and fertilizer according to tests, or apply 4,000 lb/acre ground agriculture limestone and 1,000 lb/acre 10-10-10 fertilizer.

Mulch

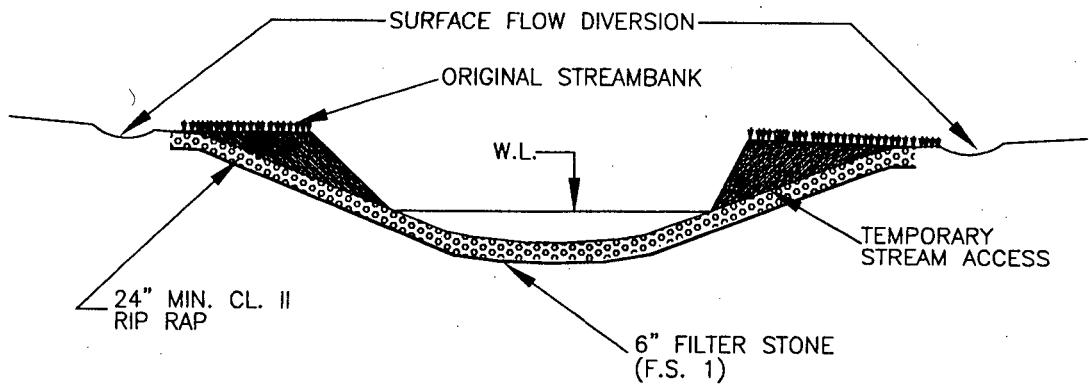
Apply 4,000-5,000 lb/acre grain straw, or equivalent cover of another suitable mulching material. Anchor mulch by tacking with asphalt, roving, or netting. Netting is the preferred anchoring method on steep slopes.

Maintenance

Refertilize in the second year unless growth is fully adequate. May be mowed once or twice a year, but mowing is not necessary. Reseed, fertilize, and mulch damaged areas immediately.



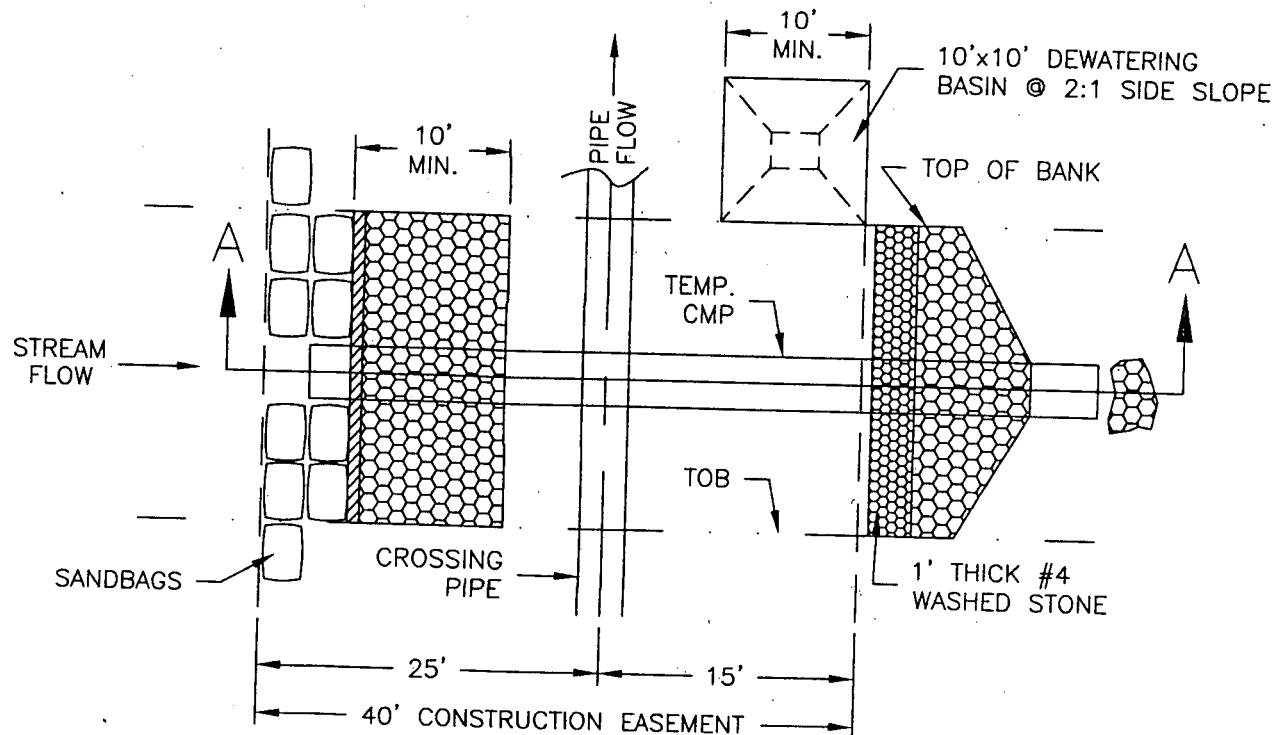
ISOMETRIC VIEW



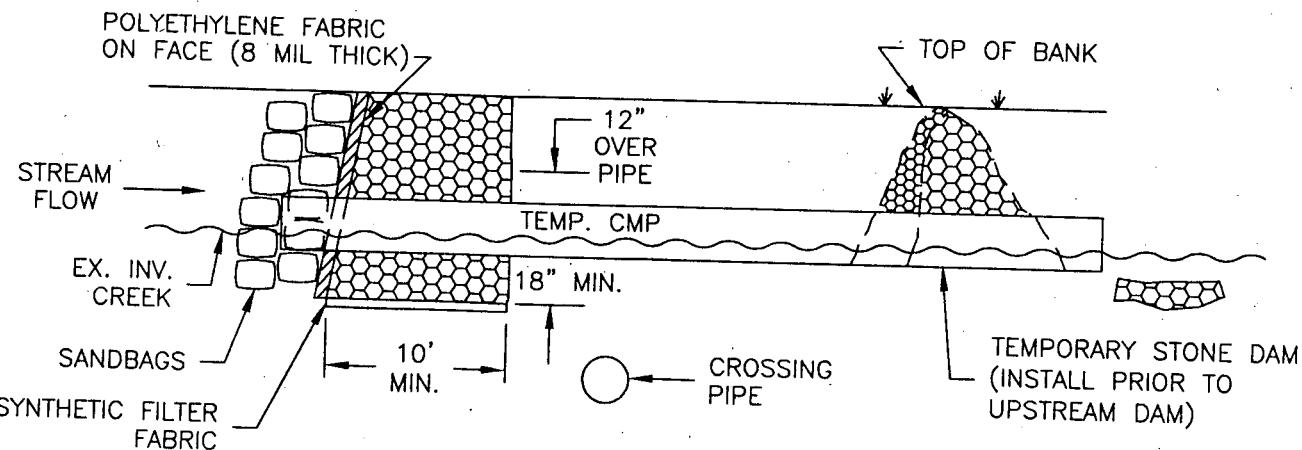
TYPICAL SECTION

PERMANENT STREAM CROSSING

NO SCALE



PLAN

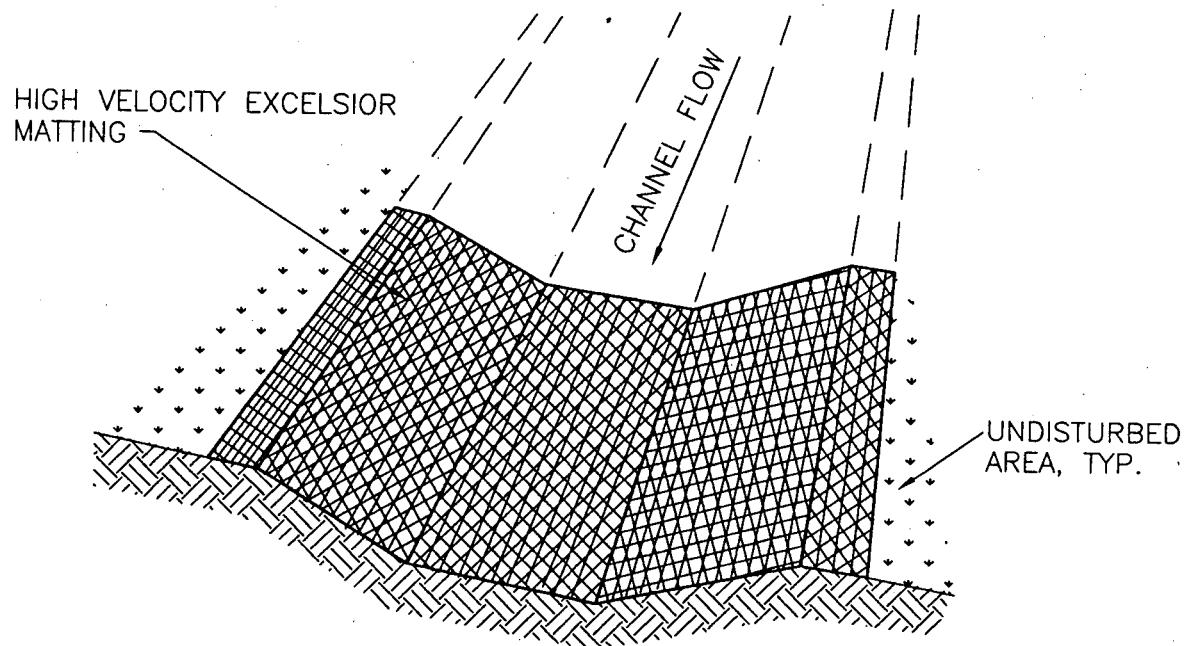


SECTION A-A

NOTES:

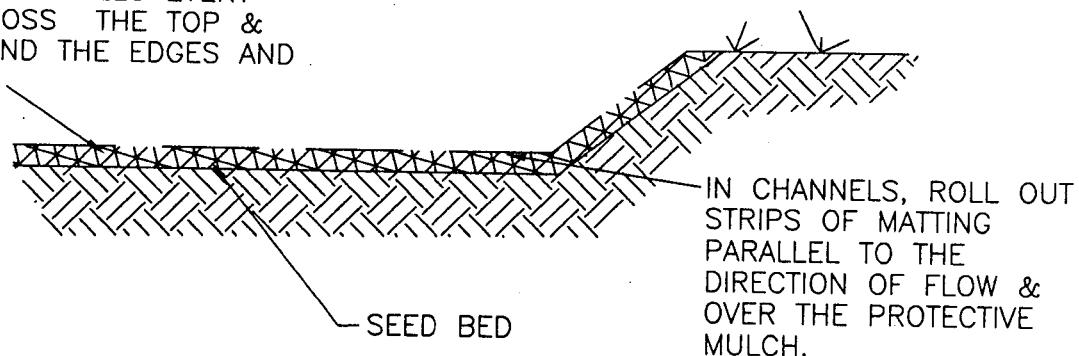
1. SCHEDULE STORM CROSSING DURING PERIODS OF LOW FLOW.
2. SCHEDULE MATERIALS & WORK SO THAT INSTALLATION OF STREAM CROSSING SHALL REQUIRE NO MORE THAN 24 HOURS.
3. EROSION STONE SHALL BE "CLASS II" RIP RAP FOR PERMANENT STREAM CROSSINGS.
4. KEY SANDBAGS & FILTER FABRIC INTO CREEKBANKS AND INVERTS WHEN POSSIBLE.
5. PIPE SIZE & NUMBER TO BE DETERMINED BY ENGINEER ON PLAN.
6. SANDBAGS, POLYETHYLENE, & TEMPORARY CMP MAY BE DELETED ON DRAINAGE DITCHES WITHOUT ACTIVE FLOW, AS DIRECTED BY ENGINEER.
7. AFTER CROSSING PIPE INSTALLATION - REUSE RIP RAP TO FORM PERMANENT STREAM CROSSING - ADD ADDITIONAL STONE AS REQUIRED.
8. SEE DETAIL PLANS FOR EACH STREAM CROSSING TO DETERMINE WIDTH. SITE VISITS WILL ALSO BE NECESSARY.

NOTE 1: DITCH CONFIGURATION MAY VARY FROM THAT SHOWN. SEE DITCH DESIGN SCHEDULE FOR ACTUAL SHAPE.



TYPICAL ISOMETRIC PLAN

OVERLAP JOINTS 6" AND
STAPLE MATTING WITH 8
GA. WIRE STAPLES EVERY
12" ACROSS THE TOP &
3' AROUND THE EDGES AND
BOTTOM.



TYPICAL CHANNEL LINING

NO SCALE

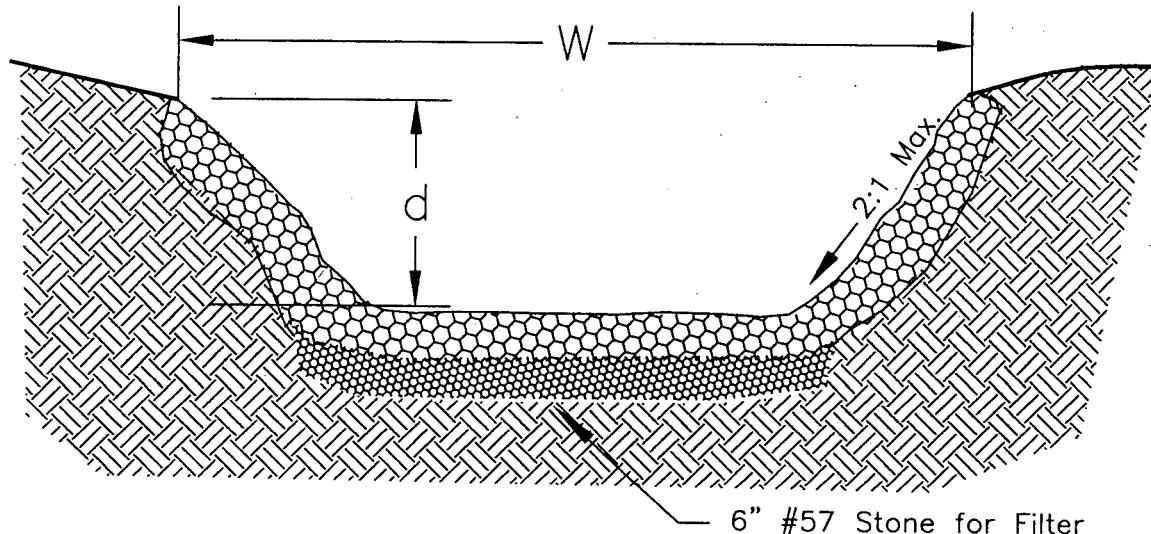
DITCH & LINING SCHEDULE

DITCH NO.	Sheet No.	Bottom Width	Side Slope	DEPTH	Lining Type		
1	5	0"	3:1	18'	High Velocity Excelsior	OR	NAG# S75 STAPLE D*
2	7	0"	3:1	18"	High Velocity Excelsior	OR	NAG# S75 STAPLE D*
3	7	0"	3:1	18"	CLASS "I" RIP RAP d ₅₀ = 24" DEEP		
4	11	3'	3:1	18"	CLASS "II" RIP RAP d ₅₀ = 32" DEEP		
5	11,12	3'	3:1	24"	High Velocity Excelsior	OR	NAG# S75 STAPLE D*
6	12,13	4'	3:1	12"	High Velocity Excelsior	OR	NAG# S75 STAPLE D*
7	35	0"	3:1	12"	High Velocity Excelsior	OR	NAG# S75 STAPLE D*
8	36	0"	3:1	18"	High Velocity Excelsior	OR	NAG# S75 STAPLE D*
9	68	0"	3:1	12"	High Velocity Excelsior	OR	NAG# S75 STAPLE D*
10	68	0"	3:1	12"	High Velocity Excelsior	OR	NAG# S75 STAPLE D*
11	68	0"	3:1	12"	CLASS "I" RIP RAP d ₅₀ = 24" DEEP		
12	68	0"	3:1	18"	CLASS "I" RIP RAP d ₅₀ = 24" DEEP		
13	69	0"	3:1	12"	CLASS "B" RIP RAP d ₅₀ = 18" DEEP		

* N.A.G. = NORTH AMERICAN GREEN CORP. PRODUCTS NUMBERS

NOTE:

Rip rap Lining Shall be
1.5 x Maximum Stone
Diameter.



TYP. RIP RAP CHANNEL LINING

NO SCALE

CHANNEL LINING

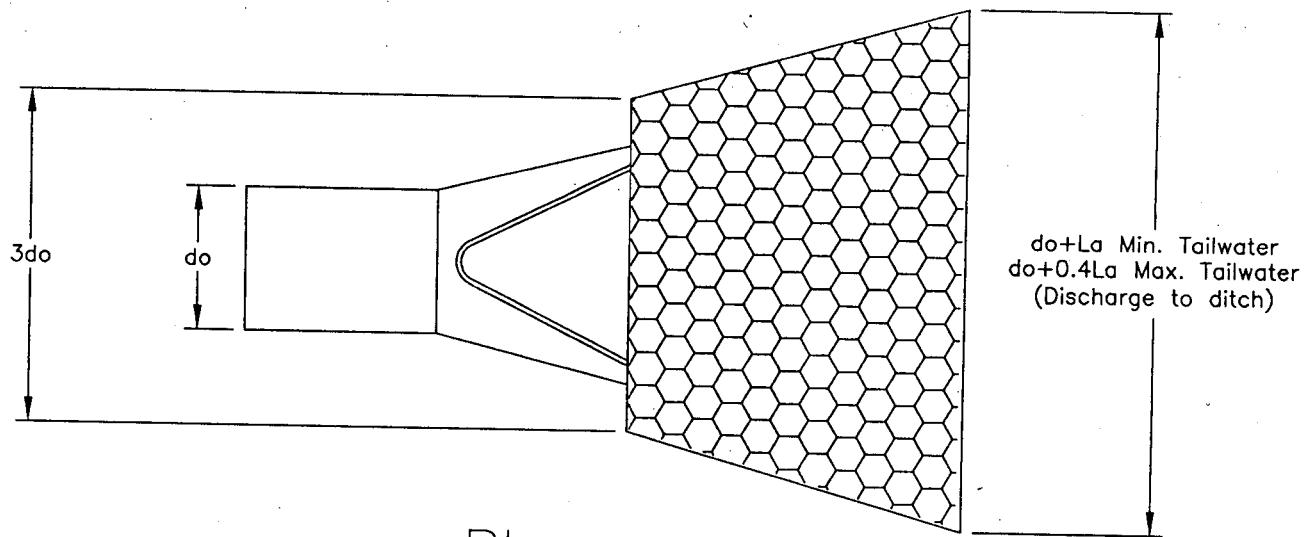
NO SCALE

CULVERT INLET & OUTLET PROTECTION.

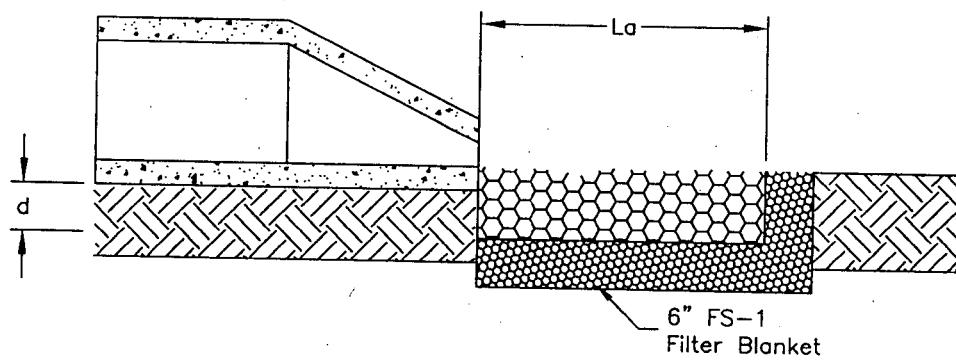
CULV. #	CULV. SIZE	3do	La	do+La	do+0.4La	d	Rip Rap Size
1	18"	4.5	14	N/A	15.5	18"	Class 'B'
2	24"	6.0	10	N/A	6.0	9"	Class 'A'
3	42"	10.5	50	N/A	23.5	18"	Class 'B'
4	18"	4.5	8	N/A	4	9"	Class 'A'
5	24"	6.0	8	N/A	4.5	9"	Class 'A'
6	24"	6.0	16	N/A	8.5	9"	Class 'A'
7	24"	6.0	38	N/A	17	24"	Class 'I'
8	24"	6.0	28	N/A	13	18"	Class 'B'
9	18"	4.5	6	N/A	4.0	9"	Class 'A'
10	18"	4.5	6	N/A	7.5	9"	Class 'A'
11&12	18"	4.5	6	N/A	7.5	9"	Class 'A'
13	18"	4.5	4	N/A	4.5	9"	Class 'A'
14	18"	4.5	4	N/A	4.5	9"	Class 'A'
15&16	18"	4.5	6	N/A	7.5	9"	Class 'A'
16A	18"	4.5	6	N/A	7.5	9"	Class 'A'
16B	18"	4.5	6	N/A	7.5	9"	Class 'A'
17&18	18"	4.5	6	N/A	7.5	9"	Class 'A'
19	18"	4.5	12	N/A	13.5	18"	Class 'B'
20	18"	4.5	12	N/A	13.5	24"	Class 'I'
21	18"	4.5	6	N/A	7.5	9"	Class 'A'
21A	18"	4.5	6	N/A	7.5	9"	Class 'A'
21B	18"	4.5	6	N/A	4.5	9"	Class 'A'
22	18"	4.5	6	N/A	7.5	9"	Class 'A'
22A	18"	4.5	6	N/A	7.5	9"	Class 'A'
23	15"	3.75	6	N/A	4	9"	Class 'A'
24	15"	3.75	6	N/A	7.5	9"	Class 'A'
25	15"	3.75	6	N/A	7.5	9"	Class 'A'
26	15"	3.75	6	N/A	7.5	9"	Class 'A'
27	15"	3.75	6	N/A	7.5	9"	Class 'A'
28	15"	3.75	6	N/A	7.5	9"	Class 'A'

RIP RAP OUTLET PROTECTION

NO SCALE

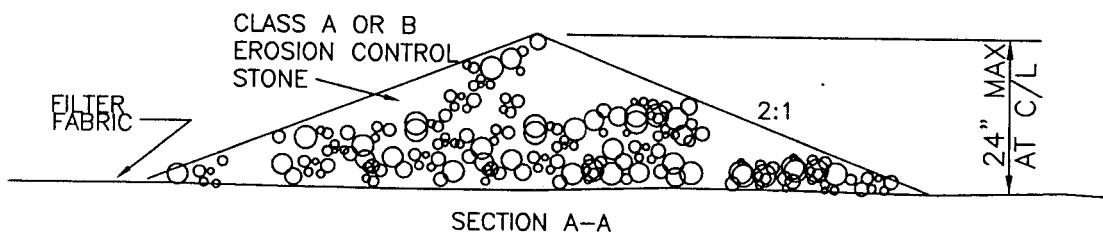
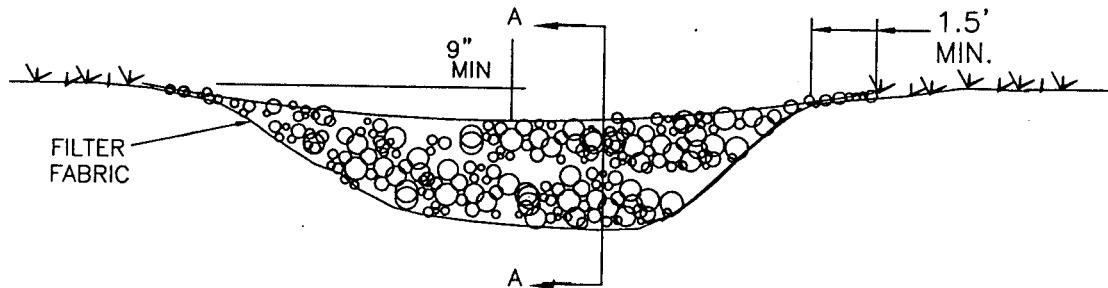


Plan

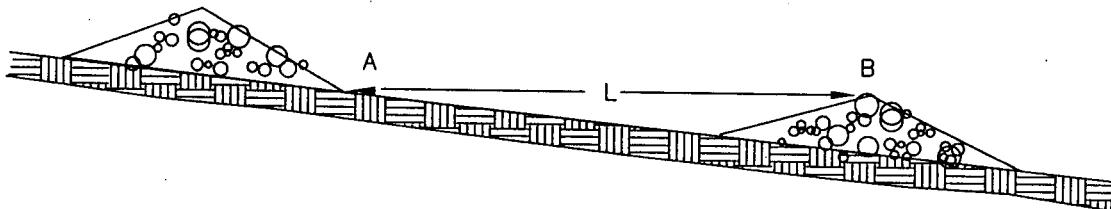


Section

STONE CHECK DAMS SHALL BE USED WHENEVER ROAD DITCH SLOPE IS 3% OR GREATER.
SEE DETAIL FOR SPACING. REMOVE CHECK DAMS AFTER GRASS IS ESTABLISHED.



L=THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION



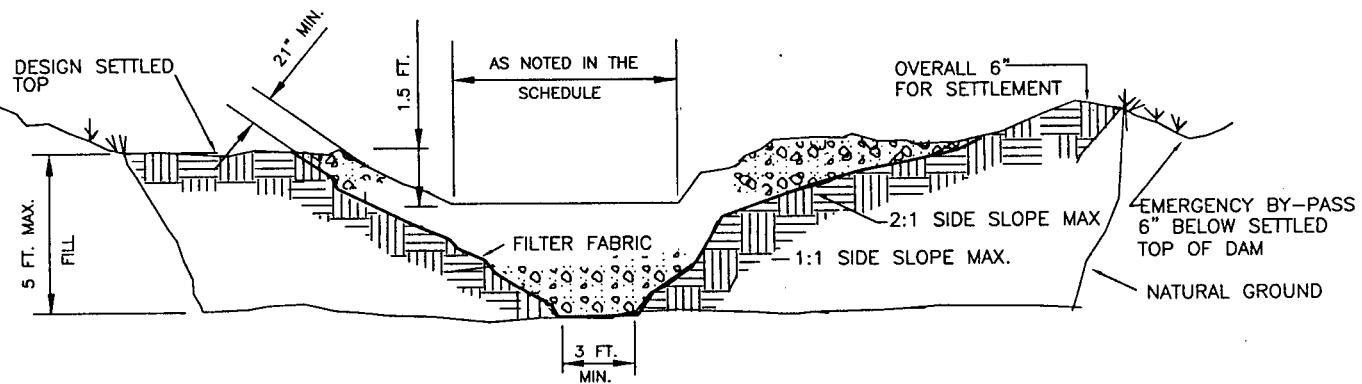
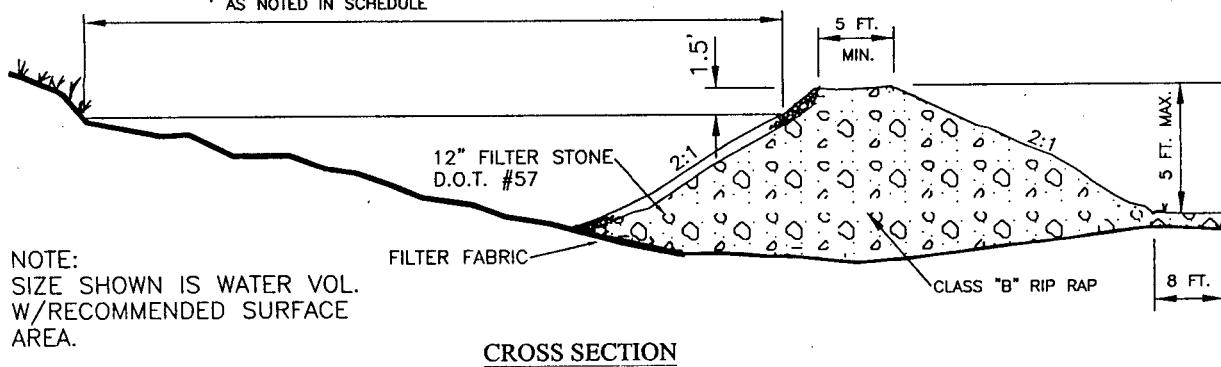
NOTES:

1. USE 2 TO 15 INCH STONE (N.C. DEPARTMENT OF TRANSPORTATION CLASS A OR CLASS B EROSION CONTROL STONE.)
2. KEY THE STONE INTO THE DITCH BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 18 INCHES TO AVOID WASHOUTS FROM OVERFLOW AROUND THE DAM.

TEMPORARY STONE CHECK DAM

NO SCALE

6
-



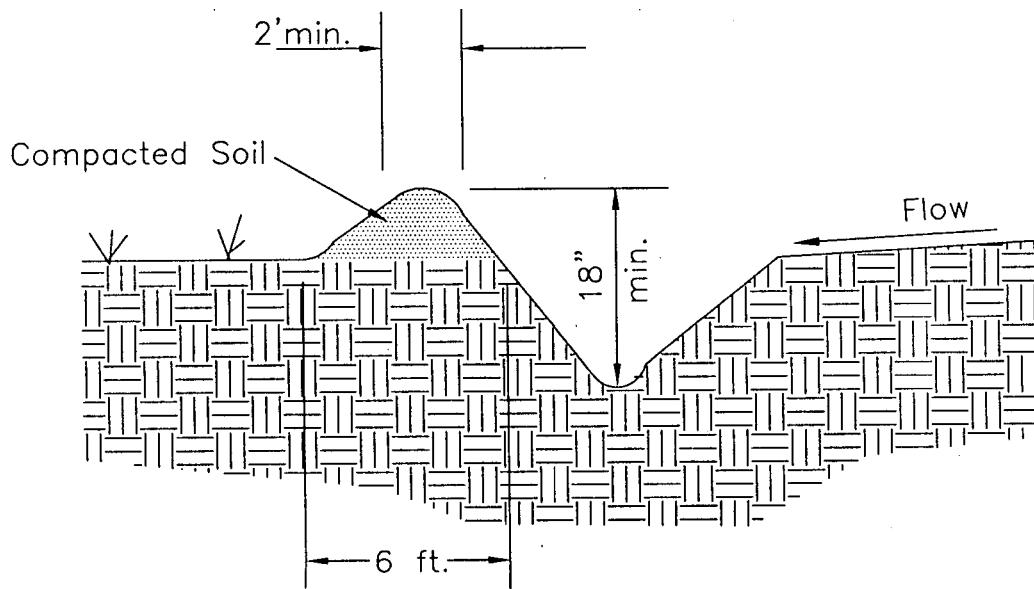
FRONT ELEVATION

TEMPORARY SEDIMENT TRAP

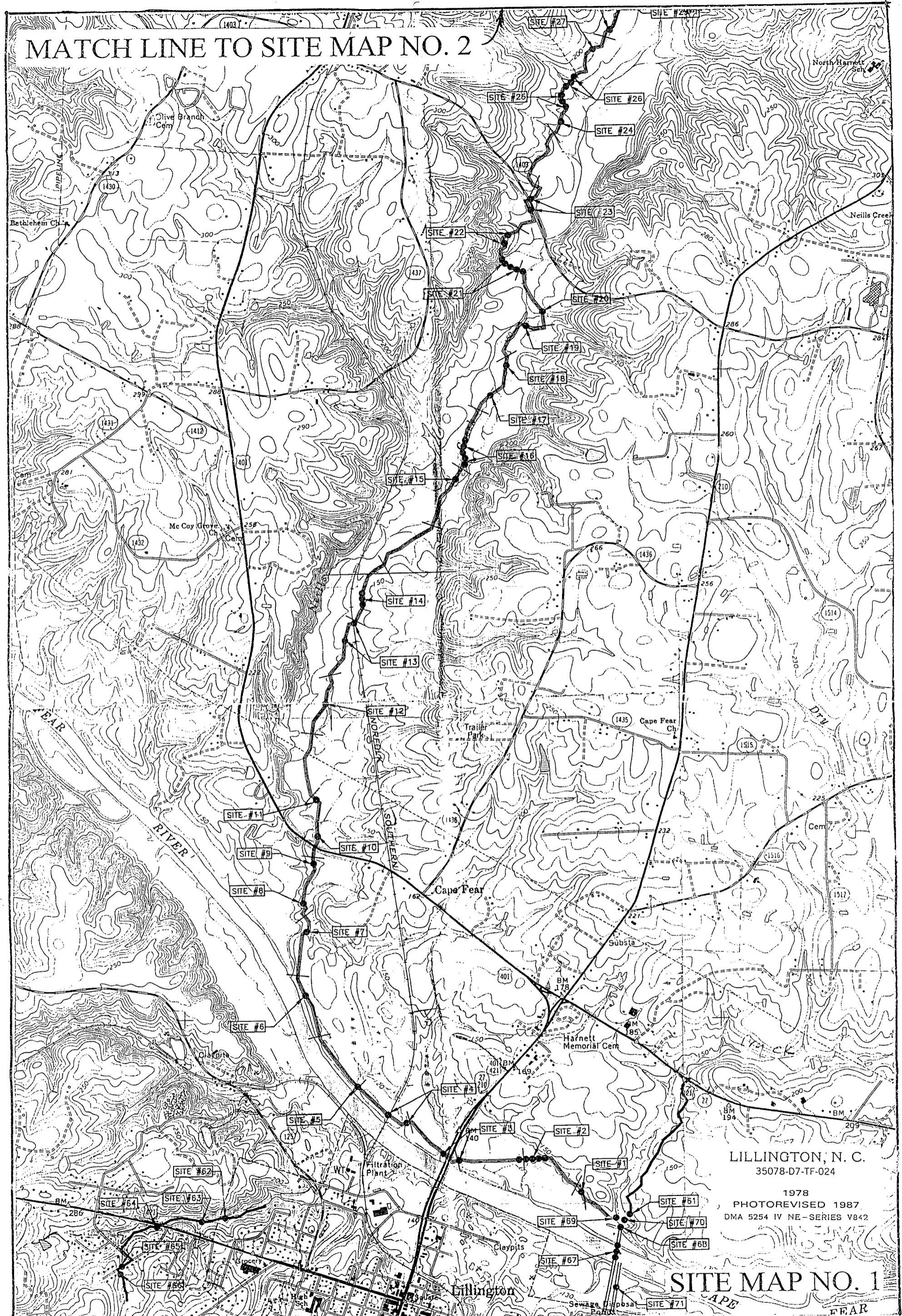
NO SCALE

SEE SHEET 75 FOR
SED. TRAP DATA

4
-



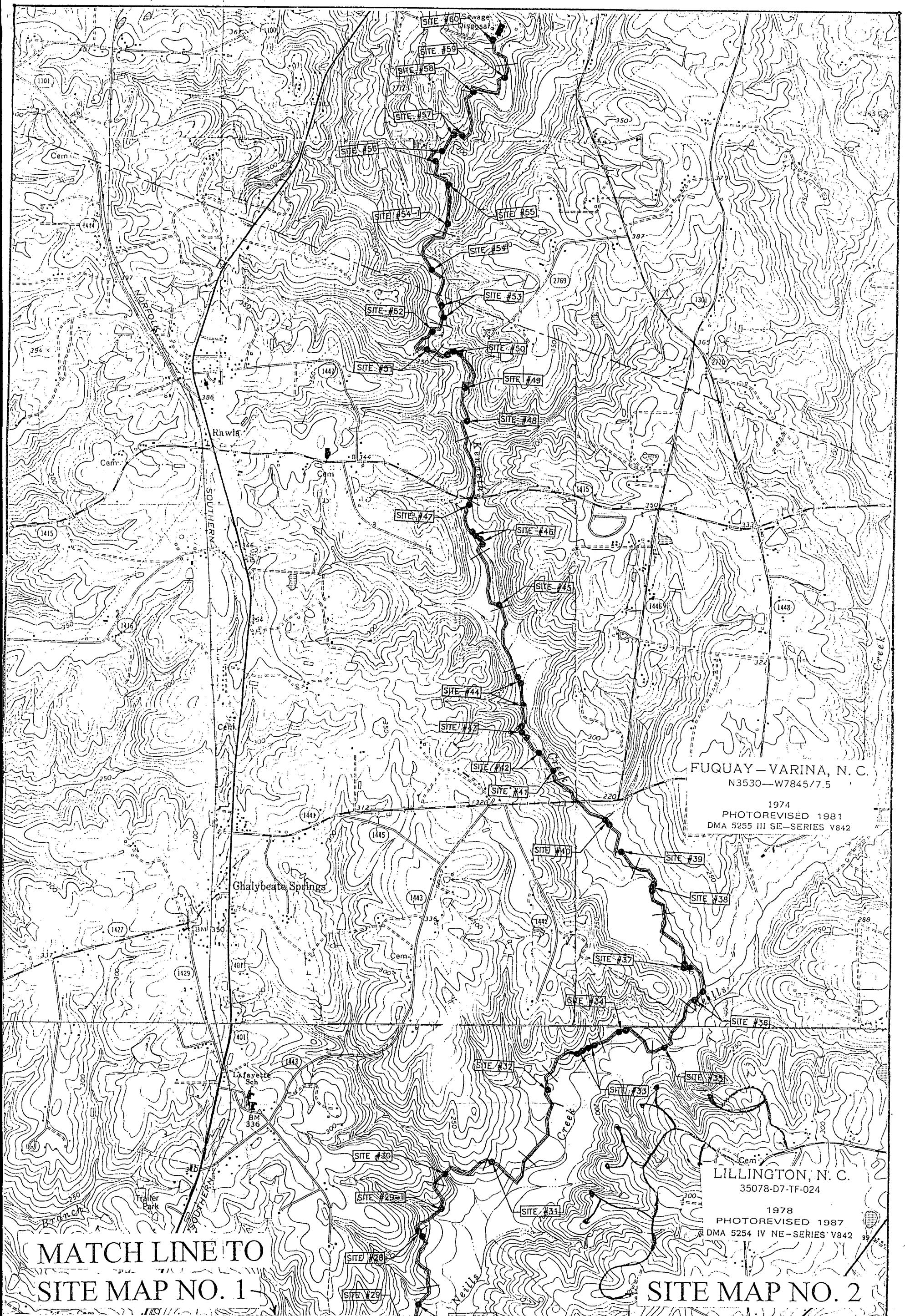
MATCH LINE TO SITE MAP NO. 2



WETLAND MAP LOCATIONS
HARNETT/WAKE SANITARY SEWER SYSTEM
HARNETT & WAKE COUNTIES - NORTH CAROLINA



MARZIANO & MINIER, P.A.
CONSULTING ENGINEERS
ASHEBORO, NORTH CAROLINA



MATCH LINE TO SITE MAP NO. 1

SITE MAP NO. 2

**WETLAND MAP LOCATIONS
HARNETT/WAKE SANITARY SEWER SYSTEM
HARNETT & WAKE COUNTIES - NORTH CAROLINA**



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